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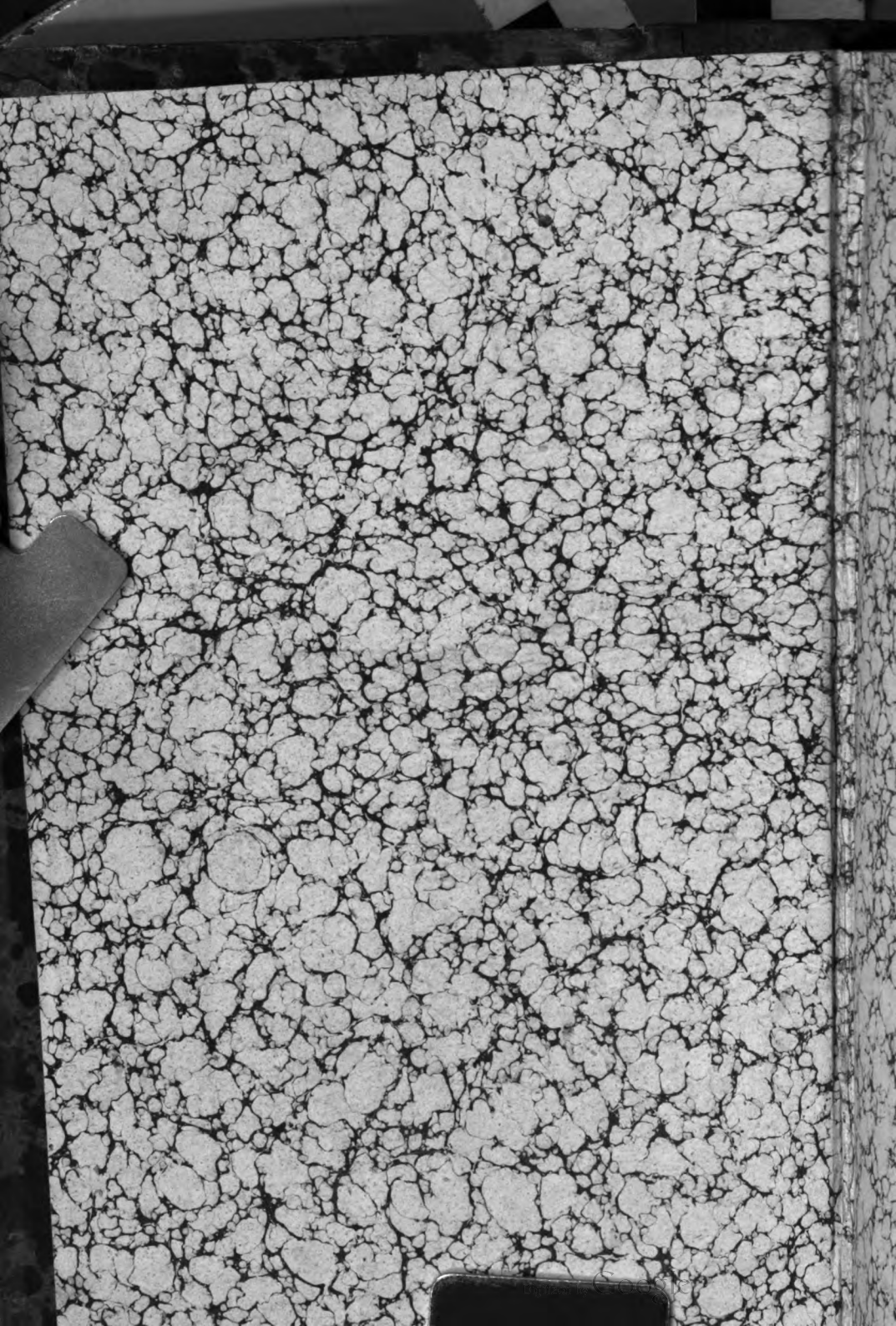

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AND

Naval Chronicle.

FOR 1852.

A JOURNAL OF PAPERS

ON SUBJECTS CONNECTED WITH

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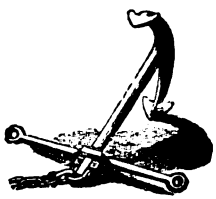

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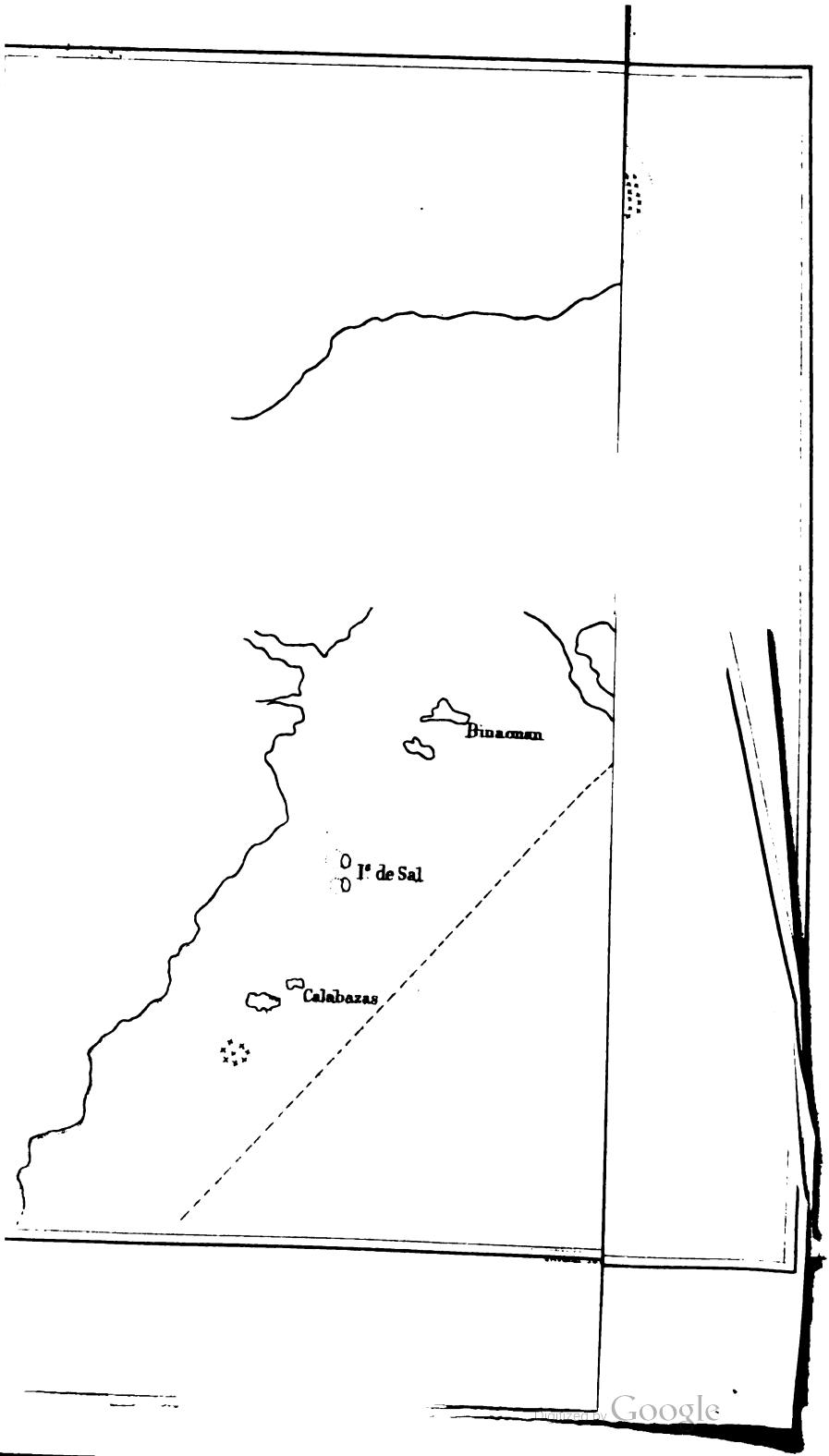

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THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

JANUARY, 1852.

Lighthouse Projectors, *and the Models and Plans at the Great Exhibition.*

It was natural to expect that an Exhibition promoted by a maritime people would prove to be a strong claim on their talent and genius, in all that related to *naval architecture*, and *nautical science*, and that expectation was in a great degree realized. The powerful concentration of artificial light to guide the mariner on his way, arrested the attention in one of the most conspicuous positions of the building. Then we had models of vessels, furnished by the great public bodies, and private individuals, and the simple, yet beautiful symmetry of primitive canoes, might be contrasted with the very latest improvements in the boat-building art. Neither was there any paucity of invention for saving life from *fire* or *flood*, or models of craft declared capable of carrying to the very jaws of death (*with exemption from its terrors,*) those gallent men, who so often peril their own existence to save their fellow creatures from destruction. Such was the emulation elicited; and rival nations found a *neutral ground* upon which to place the trophies of their industry, and to display that versatility of talent which is the *soul of commerce*, and the gift of peace!

Yet, while the admiration was excited, it was evident to the close

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observer, that very much of this was *theoretical* and *Utopian*. It is easy to scientific amateurs to seat themselves comfortably at the table of their study, and propound principles in mechanics, and delineate beautiful diagrams, which in theory appear to be *thoroughly convincing*, and yet in practice disappoint their projectors. Nay, they may even succeed in miniature modelling to comparative perfection with machines, which upon a *more enlarged scale*, are doomed to *decisive failure*. The amateur generally looks for the development of his plans to a *secondary agency*, and if disappointed, his friend's stupidity is the alleged *scape-goat* of the scheme. Candour, however, would remind him, that inventors and patentees should *personally* superintend the carrying out of *any work* which professes to be *an original conception*, and if attended with difficulty to *share in all its hazards!*

Some of the very curious models and proposals for redeeming a part of the Goodwin or other shoals, or to build lighthouses thereon to *facilitate navigation*, might well excite in an experienced mind the following reflections. Have the projectors *ever seen* that terrific shoal in its robes of storm, or watched the invading tide sweeping along its extended wastes with the precipation of a milldam, and scattering abroad upon the waters, the disjointed masses of a *stoutly timbered ship?* I could hardly believe this possible while contemplatiug *some of the models* at the great Exhibition.

I could fancy an elegant architectural column upon piles or cylinders, erected during the fine summer months, and doomed to destruction by unavoidable casualty before the winter was half over, and why? Experiment upon experiment *has been tried*. Safety beacons of small dimensions, and offering little resistance to the chafing surge, *have remained* for a few years, while a splendid cylindric column disappeared in *a few days* during the *first heavy storm* to which it was exposed! The much vaunted "light of all nations," sent forth an evanescent ray, and its iron carcase now, *occasionally* peeps through the sand which has covered it. Can all this be a matter of surprise to those who know the nature of these shoals? Fancy a case;—a large vessel tempest-driven grounds in the tidal stream of a beacon or other building, she breaks up! A section of her parted frame, *a bow* or *quarter*, lifted upon the crest of a raging sea, is hurled *against the edifice*, and again, and again *assaults it*, till parted into smaller fragments and drifted clear away upon the tide! Here is a battering ram of formidable power, and such as was never contemplated by those whose drawings look so pleasing and attractive in the study, or upon the table of a metropolitan institution. Again, amateur-engineers *will have a lighthouse on* the Goodwin Sands! But where? Upon *what part* of its extensive area? This is a *momentous question*, for, if placed improperly it would lure ships into danger, in lieu of guarding them against it. I have before me a proposition for enclosing an area of 600 feet diameter, by a circular breakwater of faggots. The talented projector has not explained how he will preserve a faggot circle of 1,800 feet *intact*, upon a site of shifting sand where the whirling eddies have a *rise* and *fall* of many feet, *twice* in every twenty-four hours. In the centre of this area, the sand is to be

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excavated to a depth of eighty feet down to the chalk substratum by means of circular cassons, and a tower of solid masonry is to be raised through that depth till its head is 140 feet above the surface, together, 220 feet *from base to lanthorn.* An artesian well is to *pierce downwards* into the fresh springs to supply a fleet with water. This *bold conception* was also proposed by the unfortunate projector of "the light of all nations;" but, these gentlemen have forgotten to provide—first, a *safe anchorage for ships whilst watering!* Such and so various are the schemes for conquering the terrors of our modern Charybdis and emanating as they do, from the *noblest principle* in our nature (*philanthropy*), they deserve our respect. But they are all very properly met, by the simple proposition, can you better the present arrangement as to *lights*, and *beacons*, and *buoys*, in this *particular locality!* Let us try the question and compare the facts, and I fear we may take shame to ourselves for the outcry we are thus continually raising in the reflection, that our ancestors navigated these waters, when there was but one light to the Goodwin in lieu of three, and that light insignificant indeed, when compared with recently improved reflectors, and also at a time when there were no *beacons* or *monster buoys*, and the whole French coast opposite was a blank after sunset. Let us then compare the probable effects of a lighthouse upon the crown or centre of the Goodwin Sand (if *practicable*) with its proposed altitude of 140 feet above the surface, or 130 feet as a consequence above the level of high water.

I should imagine the projector has never *placed the chart before him*, or taken the angles and distances of this illuminated channel, "the *Strait of Dover*," but, that he has been entirely absorbed in the conquest of art over nature, and the sublime aspect of a *royal statue* peering amid the surf of Earl Goodwin's submerged domain! He has entirely *lost sight* of the splendid lights which are exhibited on *both the Forelands*, for the express purpose of guiding the mariner in safety through the deep water channels contiguous to these dangerous shoals: nor can he have compared their *admirable positions*, with that of any similar guide which *could* be erected upon a *lower* and consequently *inferior site.* I have repeatedly stood upon Calais Pier admiring the brilliant twin tower lights of the South Foreland. Now, admitting the length of the Goodwin to be ten miles, and giving a mile at each extremity as the nearest prudent approach in a *strong tideway*, a central lighthouse upon the sand would be six miles distant from either danger. But the South Foreland lights are only three miles and a half, from the South Sand Head, and the North Foreland light six miles and a half from the North Sand Head. Here then are splendid lights of superior altitude, always accessible and free from casualty, closer to each outlying danger than a central light upon the Sand could be placed, and entirely clear of the dimming spray which in a storm would envelope a tower, having ten feet water *around its base.* When crossing from Ostend in a gale, I could always see the line of the Goodwin, by the white surf careering along its whole extent, and the cloud of spray *hanging above it.* These Foreland lights in days of yore, were considered *all sufficient* when the profession of a seaman was more *practical* than *theoretical*, when the

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man at the helm was not blinded by the captains' round-house stuck before his nose! when a rough-tree rail was the only bulwark! and the lead was kept going in pilot's water in the hand of the hardy seaman—

"By practised skill o'er bar and shelf to sound,
With dextrous arm, *sagacious of the ground.*"

I have an ancient chart before me, and when it was published there was not a light-vessel at all *near the Goodwin Sand!* The guides on shore also were *fire beacons* in the open grate upon the summit of low towers on the headlands, and they were considered *unerring guides.* But to make assurance *doubly sure* in later times, a *light-vessel* was placed near the North Sand Head, with triangular lanthorns to distinguish it, and for many years it was deemed all but impossible for the navigator to err in approaching this navigation from the German Ocean, or to run into danger, except by *sheer carelessness* or *design* (and when there has been *no risk of life*, design has been but too apparent in *numberless instances*). Such were the features of the Goodwin lights when I first knew them. During the last war it became necessary to maintain a powerful fleet in the blockade of the Scheld, and as the Downs were the rendezvous, a light-vessel was moored in the Gull stream with two horizontal lanthorns to *distinguish her* in order to lead the heavy ships of the line more securely up to their anchorage. I remember well the prevailing exclamation "*now we are posted and railed off, we can't mistake;*" and thus they remained for many years till the loss of an *ill-fated* East India ship the *Ogle Castle*, on the South Sand Head. And as I, with many others from the cliff at Ramsgate at a distance of nine miles, *saw that ship go on shore in broad daylight*, that casualty could not be in consequence of a *paucity of lights or guides*, for we could count the ships in the anchorage. No, the error in judgment on the part of those in charge was self evident.

They had the ship under a great press of canvass for so heavy a gale, close-hauled, thinking to *weather the shoal*, and fetch into the Downs, where the fleet lay anchored at a comparatively short distance *a-head of them!* But they had a *lee tide*; the ship would not weather the breakers—struck! All her spars went *instantly* by the board, and in an incredibly short time, not a *vestige of her* was visible. The authorities feelingly alive (as experienced mariners themselves) to such severe loss of property, and melancholy sacrifice of human life, then placed a light-vessel *with a single lanthorn* at the *South Sand Head*, and these vessels are all equipped with a *signal gun and rockets* to give warning to vessels should they see them standing into danger, as well as to call off assistance from the shore. In addition to all these the outer line of the shoal has a cylinder beacon, and monster buoys to define exactly its limits. When we consider all this, and then take into account, the magnificent revolving light on Cape Grinez, and the flashing light at Calais, both of which we repeatedly see from Ramsgate, the rational conviction most assuredly presents itself, that the numerous losses arise more from *incapacity* or *recklessness* than from any neglect of precautionary measures in the adaptation of *lights, beacons*, and *buoys*, to the coast. Let us

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for a moment contemplate;—a ship abreast of the light at Dungeness, in the fair way of her course, and bound to the Thames, has Cape Grinez blazing upon her starboard beam, and it is only five leagues distant from her till she has passed through Dover Roads, for if you place the leg of your dividers upon Cape Grinez and describe an arc, you will sweep both South Foreland and South Sand Head lights, at a distance of *only eighteen miles.* What course we may ask, must a ship steer in ordinary weather, without having both these guides blazing upon her path! And if bound for the German Ocean, the South Foreland lights kept in one are her leading marks to clear the shoals.

She must run over the South Sand Head light-vessel 'ere she approaches danger, and as she leaves the Goodwin in proper direction, Calais light is in view and at similar distance. Can any more perfect arrangement for navigating this locality be arrived at? Here are *cross bearings* enough and to spare in *ordinary weather*, and in *fogs* or *snow-squalls*, the light-vessels have gongs or bells to give warning to those, whose recklessness prompts them to keep underway when their only security is *to anchor for a clear.* A central lighthouse would be *too distant* from the outskirts of the Sand to render signals *effectual;* nor would its inmates be of *any service* as a solitary watch, while the light-vessels on the contrary must be approached, and their station *passed* before shallow water is at hand! Again, such a building would be inaccessible for weeks together during winter, while the light-vessels can be boarded by the daring and expert mariners who cruize in their luggers in the heaviest weather!

What then can account for the continual and distressing amount of loss in this locality? There are persons who attribute it to *excessive competition*, and there are certainly instances, which favour *that opinion.* Although extra risk, and intense anxiety may obtrude itself upon the masters' minds, there is no *shortening sail*, or *heaving-to* now; but *crack on*, to *overtake*, or perchance to *leave* competitors astern. No *easing* the *steam power or speed* of those headlong *wildly steering vessels.* We saw one unfortunate pass Ramsgate in the evening which ushered in the last agonising night to *every soul on board of her.* The crew of a Deal lugger spoke her, as the night was closing in, and tendered her service for £5. to pilot or assist the master by her experience, till a *certain distance was achieved.* The reply was, "I cannot afford five, I will give you £3." This would not remunerate the lugger's crew, and they advised him not to go on while it *was so thick* and *hazardous.* He observed, "*My opposition* is astern of me, I *must* keep on." The result of this determination was, one of the most *fearful wrecks* on record, and this should be a warning to public companies and shipowners, as to their conduct towards the commanders of their vessels. Many a reckless, happy-go-lucky fellow, gets ill-deserved credit with them for energy, while the more prudent and skilful preserver of the lives and property entrusted to his charge, is too often taunted with apathy and indecision of character.

"Better twice about, than once ashore," is the old adage. I have endeavoured to prove that our ocean path is better defined for us than

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it was for our forefathers, and it will be passing strange if seamanship declines, while nautical science advances. It may be that additional security begets an overweening confidence, and we trust too much to lights and too little to soundings. There is no estimate with the plan before me, which I have thus briefly described, but it is my humble opinion, that its cost is not within the reach of any moderate computation, while its utility may be questionable.

I cannot close these remarks, without a few observations upon the expressed desire of some persons in authority, to relieve the shipping of all nations from the dues necessary to support the lights. Setting aside the policy of such a measure, let us examine its justice, and the question arises:—Who are most benefited by these ocean guides? The *nautical mariners* who can acquire a *local* knowledge of their *ocean coast-line*, its *harbours, havens, roadsteads*, or the foreigner from a distance who is bringing his ship into *strange waters?* His must certainly be the *greater obligation*, and it is but just that he should bear a *proportion* of the expense. Suppose for a moment, *all our lights* at once extinguished! How would the northern nations suffer in the *uncertainty* of their more protracted reckoning. There is a ship now under my care, which has been knocking about the North Sea for six weeks, (from Norway bound to Bordeaux) and the captain became at last completely bewildered in reckoning, till boarded by a *British Fisherman.* I asked the captain what he would do, if we *put all our lights out?* He said, "They must go north about, they could not *attempt* the Narrow Strait." A treat certainly in the month of November. The Captain spoke truly, when he assured me, that the *northern mariners* never begrudge the *dues for lights, beacons*, or *buoyage.*

K. BEACHAM-MARTIN.

[We understand that in the course of the week terminating on the 16th of December, no less than five ships of different sizes were extricated from the Goodwin, having been drifted on that Sand in light airs with fog. In such a dangerous navigation increased by a rapid tide, when fog prevents seeing a boat-hook's length from the ship, we should like to know what business has any vessel to be underway, and that too with no lead going, when she ought to be lying quietly at anchor until it clears away? What is it, however, but a part of that *opposition* system alluded to by Captain Martin. But now that a court of enquiry has been happily instituted by the Board of Trade into the wrecks of merchant vessels, we trust that this heedlessness and risk of life and property (the latter most likely insured) will be exposed and checked. We all know the meaning of competition, although that may cause the loss of *insured property*, the lives of our seamen must not be sacrificed at the shrine of Mammon. The masters of the above five vessels were equally culpable, as if they had been lost with every one on board.—ED.]

IRISH LIGHTS.—*South Coast.*

SIR.—During the last summer the two additional lights which have been established on the south coast of Ireland, are, one on Mine Head, county of Waterford, and the other on Ballycotton Island, county of Cork.

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Whether it arises from their bearing too close a resemblance to other lights on this coast, or that notice of their being displayed has not been properly circulated, they are now objects of doubt and perplexity (as we have witnessed), and the question put to us by bewildered strangers, makes it evident that the latter, if not both causes, operate much against their present usefulness.

Before the long winter's nights set in, it would be well if some exertion was made to apprize ship-masters of these additions recently made to our coast lights. It cannot be over done. Information on such subjects should be as patent afloat, as any other subject of deep general interest usually is on shore, and this I would suggest, might be effected through the agency of the custom-house, by delivering to each master a Trinity-Board notice of the intended change with his clearance.

The necessity that seamen should have a clear conception of the appearance of the lights in question is rendered of greater importance from there now being four of an intermitting character between Cape Clear and the Tuskar.

The sea lights on the south coast are now as follows:—

Cape Clear.....	one revolving.
Old Head of Kinsale	one fixed.
Roche Point	one red to seaward.
Ballycotton Island	one flashing.
Mine Head.....	one intermitting.
Hook of Waterford.....	one fixed.
Saltee Light Ship	two fixed.
Tuskar	one revolving.

Cape Clear light is described in that very useful but too little known publication, "*The Light-Houses of the British Islands,*" as "one light revolving at intervals of two minutes."

Ballycotton Island has one bright light, showing a powerful double flash three times every minute, with an interval of darkness of eighteen seconds between each double flash. It is visible nineteen miles in clear weather.

Mine Head shews one bright light, suddenly eclipsed once every minute for ten seconds, it is visible twenty-two miles in clear weather.

Tuskar, one light, showing alternate one red, and two bright phases, each phase attaining its greatest brilliancy once in every two minutes, consequently the red phase occurs every sixth minute. At ten miles distant, the bright phases are visible thirty seconds, the red not more than twenty seconds, beyond that the red is scarcely perceptible; but the bright may be seen fifteen miles in clear weather.

It will readily occur to every one that these lights each partaking so much of the others' nature, will be worse than useless to a vessel running in a south-west gale and thick weather, if the interval and nature of their appearance is not perfectly understood. To fulfil the intention for which they were erected, a plan must be adopted which will bring the information home to all concerned, many of whom are not in the habit of reading the ordinary periodicals in which such notices usually appear, and when they do, may probably overlook them.

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It is also a subject of deep importance, that the charts used by merchant ships which are frequently very old and incorrect, should be subjected to revision under authority, that the additional lights and discoveries made by surveyors be inserted on them. H.

[Our number for July contains the notice of the Ballast Board at Dublin, announcing the *intention* of establishing these lights, but we have met with no notice from that Board of such intention having been carried into effect. – Ed.]

A Visit to St. Helena.

St. Helena, situated within the borders, and in the heart of the south-east trades, appears on every side a barren and unapproachable rock, which, with naked walls rises abruptly from the ocean. The whole mass is a collection of deep vallies, chasms, steep mountain-ridges and peaks, the highest of which latter are called Diana Peak, Cuckold Point, and Hally Hill,* occasionally hiding their green summits in the clouds.

No coast in the world presents such a chilling appearance as St. Helena, with its steep and cloven crags, its barren rocky ridges, and fearful fissures, and no one beholding this forbidding coast, can imagine that the island contains so much beautiful scenery. St. Helena is in some degree oblong, almost a square, extending E.N.E. and W.S.W., and is about nine miles long, and twenty-six miles in circumference. James Town, the only one, is on the north side of the island, off which vessels anchor protected by the land from the violence of the south-east trade. Westerly or northerly winds seldom blow with force or duration, so as to endanger the shipping in the road.

Off the south-east end of the island are two pointed rocks standing high out of water, the outermost of which is called George Island and the inner one the Column of Hercules. Close off the southern cape are three craggy rocks called the "Needles," and a little to the northward of the western point of the land close to the shore are two more called Bird and Egg Islands; they are all barren rocks, the largest of which is not more than 300 ells in circumference.

Approaching the island from the south-east, the land appears to slope gradually from the middle of it to the northward, terminating abruptly in Barn point 2272 feet high. Beyond this Sugar-Loaf Point is seen, the northern extreme of the island, and near which is the well known pinnacle-shaped mountain called the Sugar-Loaf, 1960 feet above the sea. At the foot of this mountain are three batteries a short distance apart from each other, called Butter-Milk, Above Bank, and Beneath Bank batteries, mounted with heavy guns about 100 and 200 feet above the sea, and which with the others would be formidable to an enemy.

* These are respectively 2692, 2672, and 2467 English feet above the level of the sea.

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Shipmasters must be careful not to get to leeward of the Road, but to make the island from the eastward, keeping Sugar-Loaf Point when rounding it close on board.

Formerly all vessels on passing this point, sent a boat to the first named battery to give the name of the ship and the object of her visit; but of late years this practice has been discontinued. On that account our seamen gave it the name of "Pry Corner." About half a mile south-west of this point is Munden Point, which forms the eastern boundary of a bay in which, at the entrance of a small valley James Town is situated; the best anchorage off it is in from 12 to 20 fathoms. The western point of the bay is formed by a steep perpendicular hill called "Ladder Hill," about 800 feet above the sea. The distance between these two points is about three cables' lengths.

Between "Pry Corner," and "Munden Point," is Rupert valley, where landing can be effected; but commanded by a strong battery.

James Town and the Road are defended in front by a strong stone wall, on which are placed some thirty-two pound guns and heavy mortars, separated from the landing place by a deep moat; on the west side they are protected by a strong battery on the flat crown of the projecting corner of Ladder Hill, and on the east side, in addition to the above, by a strong fort on Munden Point. As soon as Munden Point is passed James Town appears suddenly between rocky precipices 1000 feet high. The white buildings and church, with the green foliage of the neighbourhood, give a pleasing effect to the scene, improved by the contrast of the adjacent crags. Immediately behind the water battery and in front of the town stands the castle, a very large building, distinguished by a flag-staff, and near to it, on the right, is another large house called the "Times Office."

In the first are the offices of the Government officials, the other is the dwelling of the harbour-master. The Times Office * is provided with a mast, from which at a stated time, a white time-ball falls in sight of all the vessels in the roadstead. The duty of regulating this belongs to the harbour-master, and affords an excellent means for rating chronometers.

In the distant extreme of the valley, on one of the highest rocky points, a large handsome white building may be seen in the midst of a grove, belonging to Mr. Young, collector of excise and customs duties. To the right of the valley is the ladder or staircase which is the ascent to the top of Ladder Hill; further inland is the elevated well known mountain "High Knoll," 1900 feet above the sea, having a telegraph on the summit of it; and to the left, at a short distance from the anchorage is the landing place.

The town consists of one street only, the houses standing lengthwise in the valley, completely surrounded by farm yards. The landing which is not very easy, is on a steep projecting rock in which steps have been

* Deriving its name perhaps, from the duty assigned to it of giving time to the ships. An account of it will be found in our volume for 1836.

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cut, and bricked, and against which the swell is so high at times, that caution must be used to spring out of the boat as it reaches one of the highest steps. A couple of hundred paces more inland, on the same rock is a second landing place and ladder, which is used when there is too much sea on the former.

The way leading from the landing place to the town gate, is partly hewn out of the rock. The stranger has no sooner landed than he is struck with the awful grandeur of the massive rocks rising nearly perpendicular above him on his left, towering over some small houses. About 500 or 600 paces from the landing is a drawbridge where the Toll-house is situate, and where is placed a neatly dressed sentinel in English uniform, white trowsers, red coat, &c. Should you have luggage it is inspected here; the gentlemen who perform that office are very civil. Having crossed the bridge, the water battery is on the right, and on the left the town wall, before which are some wooden houses behind a row of trees, in the midst of which stands the custom-house, containing the offices of the collector and other officials.

At this place vessels are cleared in and out, goods deposited, &c.; about 200 steps further, nearly under the Times office, is the gate which leads to James Town. Passing the gate the visiter sees an extensive rising plain before him, higher up terminating in a street, while to the right immediately behind it is the before-mentioned ladder of 668 steps.

Near the main-guard is an inn, called the St. Helena Hotel, and hard by the Episcopal Church, beyond which on the left at the entrance of the gate are the Town Hall, Court of Justice, and Library, and the Government Gardens, tastefully laid out, and enclosed by an iron railing and all forming an evening promenade.

The street which with this plain forms the aforesaid part of the town, is broad, and has on each side a dozen neatly built stone houses with two others standing crossways higher up, branching in two directions, the one on the left side leading through a small street is the way to Napoleon's grave at Longwood, while the other side forms a street which leads to the highest part of the valley, where are situated the parade-ground, the botanical gardens, and the hospital. In front is the market place and two shops, while further up are several public-houses, &c. The houses here are not so well built as in the lower part of the town, and characters of all descriptions are to be met with both in the upper and lower parts.

Along the foot of the ladder is a way behind the houses, by which in a zig-zag direction cut out of Ladder Hill, the visiter reaches the summit, and thence Plantation House. This path is nine feet broad, protected by a wall four or five feet high along the steep abyss. It is easy of access both for carriages and foot passengers, but presents a fearful and terrific appearance from immense crags overhanging and threatening every minute to fall and crush every thing beneath them. The road on the left side leading to Napoleon's grave is also cut zig-zag out of the steep rock called Rupert's Hill, this is also protected by a wall and is very easy for passengers.

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The lower strata of the island is mostly of a dark brown colour and has every appearance of volcanic formation; a rich and productive soil of from six to twelve inches deep constitutes a portion of the island, and produces amidst the dales and valleys a diversity of herbage of the most beautiful colours, while on the higher parts of the island are various trees of which the fir forms the principal. A stunted sort of fir called the gum tree thrives very much, and on the south-west part of the island there is a forest of these trees. The oak is also found here; it shoots up suddenly, but never reaches its natural growth.

The open plains are mostly converted into grazing lands and corn-fields, and gardens for vegetables, most of which fetch a good price in the market. The sugar-cane, indigo plant, cotton and coffee trees have been introduced into the island, and would have flourished very well, but are little cultivated, the farmer confining himself more to the growth of the necessaries of life for which he can find a daily sale in the market. Quinces, pisang, aniseed, grapes and pears, together with a variety of other fruits are found here. Apples and more particulary pear-trees are in abundance. Near to the south-east part of the island is a valley through which flows a stream, the banks of which are completely covered with this fruit over laden nearly to the ground.

The high ground of this orchard is darkish clay several feet deep. Wheat, barley and oats, flourish well, but the hopes of the farmer for a good harvest are often blighted by drought, and also by his greatest enemy the rat, which sometimes appears in innumerable quantities and destroy whole fields of wheat. Potatoes, cabbage, turnips, onions, celery, and other vegetables are plentiful, besides peas and beans in variety, a mixture of all which is daily brought into the market. Potatoes form a staple produce of the island, they are of a very fine description, and three crops are gathered during the year, and in favourable seasons 6000 bushels are annually sold. Cattle, sheep and pigs thrive well at St. Helena, but other European animals, from the change of climate are not numerous. There is also a handsome and strong horse of English breed; oxen are also of English breed. Of poisonous animals there are no others than the scorpion and centipede, their bite is not so dangerous as those of India. In general very few birds or beasts of prey, spiders, caterpillars, musk rats, nor any thing of the sort are met with; but whole hosts of rats as before mentioned, infest the island. Pheasants and partridges are abundant, and gardens and orchards are enlivened by the notes of canaries. The feathered tribe of all sorts abound, besides myriads of rabbits.

A great variety of fish are caught round the island, of which the mackerel is the principal, quantities of which are taken daily and brought to market. There are the albicore, silver fish, bream, old wives, conger eels, &c., and a fish which on account of its red colour is called the "soldier." Turtle are caught from February to June. In shell fish there are a variety of crabs, some of which are very good.

The sea birds lay their eggs in the clefts of the rocks and are used by the inhabitants as an article of food.

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Market prices in January 1849.

	s.	d.	s.	d.		s.	d.	s.	d.
Beef, per English pound		7	to	9	Onions green "		4		
Veal "		7	—	9	Do. dry, per lb.		6		
Mutton "		9	—	10	Greens, per bunch		4		6
Pork "		9	—	10	Pears, per hundred		8	to	
Live Pigs		6	—	8	Apples, (not shown)				
Live Sheep	35	to	45		Peaches, per dozen		8		
Hens, per dozen	24	—	28		Grapes, per lb (not shown)				
Ducks "	36	—	48		Pumpkins, each "				
Geese, each	8	—	10		Hay, per 100 lbs.	6	6		
Turkeys (scarce)	20	—	25		Fire Wood "	1			
Eggs, per dozen	2	—	2	6	Coffee grown on the island, per lb.	1	6		
Potatoes per 112 lbs.	16	—	20		Barley, per 100 lbs.	18	6		
White Cabbage, each		6	to	7					
Turnips, per bunch		6							

The market at this time of the year is generally scarce both of European and tropical fruits, which after February are plentiful.

Every thing was very scarce this year, particularly fruits, both European and tropical, which up to the month of February had been plentiful.

Exchange of Money.	£	s.	d.		£	s.	d.
Gold Coin.				*Silver Coin.*			
				Spanish Matten		4	4
				Half Star Pagodas		3	8
Doubloons	3	6	0	Colonial pieces (English coinage)		2	4
Bengal Mohurs (with a star)	1	13	3	Sicca Rupees (with a star)		2	1
Bombay and other Mohurs	1	10	2	Bombay and all other Rupees		1	11
Moidores	1	6	0	Dutch Florins		1	6
Napoleons and Louis d'Ors		15	7	5 Franc pieces		4	0
Dutch 10 florin pieces		15	7	2 "		1	8
" ducat		9	4	1 "			10
Pagodas (with a star)		7	3				
Porto Nova, Pajodas		5	6				

English money is worth its full value, the sovereign realizing always 20s., and sometimes more.

During the warmest months the thermometer in the town seldom ranges above 80°, of Fahr. nor on the highest parts of the island below, 54°, being a soft and productive temperature. Thunder is seldom heard, lightning is occasionally seen in sultry, oppressive weather. Instances have occurred of cattle perishing for want of water, and the grass being withered up, otherwise in all seasons rain may be expected, particularly in June, July, August, and September. On the hills and elevated spots the air is generally cool and agreeable, often shrouding in mist Longwood and the adjacent parts, passing over them like a soft rain, refreshing the earth.

From here the luxuriousness of the grazing land is seen, as you go further from the sea, where from the summit of the hills you look down upon cattle grazing up to their knees in grass.

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James Town and other lower portions of the island are frequently overshadowed by light clouds, which for several days hide the sun, and by which the powerful heat of its rays is tempered, the agreeable fresh cool breeze, which continually prevails producing the most refreshing tropical temperature. On the more elevated parts of the island the most rain falls, which is attributed to the foliage. On this account the branches of trees are strictly prohibited to be lopped off without the knowledge or leave of the authorities. In general the temperature may be put down as follows:—

		Highest temperature in		*Longwood.*		*James Town.*	
January	Light showers at intervals, nevertheless the pastures dry up	°	68	Fahr.	76	Fahr.
February	Frequent heavy rains		71	,,	78	,,
March	Ditto do		72	,,	80	,,
April	Successive rains, but lighter the preceding month		70	,,	78	,,
May	Last month of Autumn, sometimes light showers		67	,,	77	,,
June	First winter month, light rains till the end		65	,,	75	,,
July	Midwinter, all vegetation stopped		64	,,	73	,,
August	Coldest winter month		62	,,	71	,,
September	Commencement of Spring		63	,,	72	,,
October	Sheep shearing		63	,,	73	,,
November, December	Both harvest months		65	,,	75	,,

St. Helena is completely under the influence of the south-east trades which carry off the unwholesome effect of damp, and it may be considered one of the healthiest spots in the world. Sickness would be seldom known, but for vessels arriving from unhealthy parts, and every possible precaution is taken, no vessel being allowed to communicate with the shore, or any other ship lying in the roadstead, until she has been visited by the town doctor.

From pieces of rock and loose stones falling from the precipices most frequently at night, fewer accidents are heard of than might be expected.

History of St. Helena.—The island was discovered on St. Helen's day, in 1502, by the Portuguese Admiral Juan de Nova Castella. In 1513 Fernando Lopez, a Portuguese nobleman returning from India, selected this as his abode, having incurred the displeasure of his government. He remained here several years and bred various animals. At this period the island was almost covered with trees, and for a long while was known only to the Portuguese; at length it became known to the Dutch who were at war with the Portuguese, they took it in 1640, strengthened it, and made it a place for obtaining supplies for

* In 1839 the population was 4,000 souls, composed of English, South Africans and free negroes; since then it has increased exclusive of military to 6000, and, still continues.

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their homeward bound Indiamen; but in a few years finding that the Cape of Good Hope, was a more convenient place, it was acceded to the English, who in 1657 established a colony there. In 1672 the Dutch retook it, but in the following year 1673 it was again captured by the English under Sir Richard Munden, and in 1674 by Royal Proclamation it was annexed to the English East India Company, who retained possession of it, since which it has been annexed to the crown.

It is well known that Napoleon Buonaparte, who like a second Alexander or Cæsar would govern the whole world, landed here an exile, on the 13th October, 1815. He departed this life at Longwood, on the 5th May, 1821, at a farm, about two hours walk from James Town, in the sixth year of his banishment, and was buried in a small valley through which runs a spring of water, and which was his favorite spot. Five weeping willows overshadow a plain tomb that covered the ashes of this great man. On the 15th October, 1840, the grave was opened, the remains exhumed and carried to the metropolis of France. For nineteen long years this spot with Longwood, was the chief object in the island. All visitors, even now, generally take a stroll towards it.

As soon as the doctor has reported the healthy state of the ship and opened a communication with the shore any one may land. Messrs. Solomon and Carrol send on board to offer their services as shipping agents. Lodgings can be obtained from either as well as from other inhabitants at about £1. sterling the twenty-four hours. Mr. Solomon, agent for the French consul, as also for the Dutch Commercial Company is one of the best inhabitants, at whose house there is every comfort; neat parlours and bedchambers, prompt attention and a liberal table supplied with all the luxuries the island affords.

A visit to Napoleon's grave, Longwood, and other beautiful parts of the island is thus recommended.

About 9 in the morning, after a substantial English breakfast, the party sets out for a walk or on horseback, or a drive is the easiest and most agreeable; the conveyances, which are open and carry four persons are drawn by two large, strong horses, one of which is ridden by a well dressed postillion; for the hire of this £3 is paid for the trip, and for a saddle horse fifteen shillings. After a gallop through Side-Path street the vehicle ascends along the left side of the valley, which soon appears like a steep deep ravine beneath it, while overhead are threatening massive rocks. In about twenty minutes having arrived at a good elevation there is a delightful view over the surrounding gardens and country seats, lying amidst the most luxuriant foliage, while the white buildings of the town, and the vessels in the roadstead present a most beautiful panorama. A little further at a short distance off the "Briars" are passed, a small country house which was Napoleon's first dwelling. The house is small, but most delightfully situated, with shady trees close together with an orchard of all kinds of fruit, a garden and vineyard producing the finest grapes. The front of the house faces the valley and from whence there is an interesting view of a water fall.

A small front chamber in this house was Napoleon's parlour, while

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another above it served as his sleeping-room, in the rear was a flower garden in which he took much delight. This dwelling now belongs to Mr. Solomon, who keeps it in beautiful order and uses it as his country seat.

After a short drive, Alarm Hill is ascended, which is 1960 feet above the sea. Here a sudden change in the temperature is perceptible from an agreeable fresh cool air; and a beautiful view northward is seen over the town, bay and vessels in the road; and to the eastward over Longwood and the surrounding neighbourhood, also a white building and extensive wood belonging to a Mr. Young, which can be seen from the roadstead. The road winds along this dwelling through shady fir trees, and its smoothness, the shade of the trees, and beautiful green foliage leave vivid impression on the mind, that frequently recurs afterwards in far different scenes at sea.

The scene now changes suddenly. As soon as the grove is passed a fearful cliff is on the left towering over a deep abyss and steep barren lava beds of all colours, forming an extensive scene of volcanic desolation, not inappropriately called the Devils' Punch Bowl. Following this path will be seen at the end of this cliff a small green valley wherein is the grave of Napoleon, through a narrow path the visitor descends alongs the border of a hill covered with blackberries and grass to this noted place, which is about an hour and a half's walk from the town, close to it a neat white house is kept by Widow Torbet, who farms this piece of ground, and to whom each visitor pays three shillings and six-pence for seeing the grave; refreshments can be had here. All strangers enter their names in a book kept for that purpose at the good woman's request. She knows a good deal concerning the Emperor, for whenever he visited this his favorite spot, which was almost daily, he used to take a rest in her house. About a hundred yards from the house is the grave, it is twelve feet deep, built up with rough stones, protected by a reed shed built over it and an iron railing around. The five weeping willows that formerly overshaded the grave were removed with the body to France, but others have been planted in their room, small sprigs of which are presented to visitors. The old Scotch serjeant who for twenty-five years shewed the grave is still there and does his best to supply every information that can be desired relative to the Emperor, and for which piece of intelligence he generally receives a shilling. For a glass of water out of the spring from which Napoleon daily partook, and which is presented by a pretty little girl, six-pence is given; another shilling can be spent in small branches or bouquets.

Nopoleon died at the age of fifty-one; on opening the body it was found that an inflammatory cancer in the stomach was the cause of death. The corpse dressed in the uniform of the national guard, was placed in a wadded tin case lined with white satin, with the well known three cornered hat placed on the thighs. Two silver urns containing the heart and stomach, the star and medals, sword, and gold and silver coins bearing his image were placed in the coffin in the presence of Generals Bertrand and Montholon, Madame Bertrand and other persons, and soldered down. This tin coffin was enclosed in one of mahogany, which

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was again placed in another of lead, and the whole deposited in a mahogany coffin, so that the body was four times encased. On the 15th October, 1841, the grave was opened, the coffin taken up with much trouble, and opened in the presence of Generals Bertrand, Gourgand, Les Cases, Merchand, and other gentlemen.

The body was in good preservation, and Napoleon was immediately recognised. In a few minutes after being exposed to the air and the eager gaze of blood-straining eyes, the coffin was again closed, placed in a sarcophagus brought expressly from France, carried in procession to the town, and afterwards taken to the landing place in great state, where it was received by the Prince de Joinville and staff with not less ceremony, and conveyed on board the French frigate *Belle Poule*, just twenty-five years after Napoleon placed his foot on St. Helena.

Being satisfied with strips of branches, bouquets, &c., the visiter proceeds along the same narrow path further up the hill to an even road, from which he has descended, and turns to the left along Napoleon's valley, which presents a pleasing prospect surrounded with foliage. Very shortly he arrives at a place where the road takes three turnings, called Hutsgate. Here he passes behind a neat small cottage, in which General Bertrand and his family in the first instance took up their abode, and from whence there is a beautiful view of the grave and valley. Subsequently this cottage was occupied by a widow woman who supplies refreshments, &c. The distance to Longwood is half an hour's walk along an even road, from which on the right is first seen a view over an extensive and fruitful valley cut through hill and dale, covered with beautiful grass, studded with summer houses in the midst of groups of trees, their tints presenting a variety of green, intersected by little streamlets, while cattle and sheep are luxuriating in the meadows, all presenting a prospect of the most beautiful description, which is enhanced by part of the Devils Punchbowl on the left. Proceeding further, two rough stone pillars are reached on the right hand, with an open gate leading through to Longwood, where, in the distance, Napoleon's old residence appears as a miserable old farm-shed with hay stacks, &c. The entrance to this dwelling, Napoleon's last residence, is through a rough gate-way which is open to the public, on the payment of two shillings each person.

This shamefully neglected building is oblong, about fifty feet long, eighteen broad, and thirty high,—it has three rooms in the middle, in one of which Napoleon died. There is now a corn mill inside, worked by horses and asses outside; potatoes and other vegetables are kept in the billiard room, while the furthermost room is a receptacle for corn, &c. A building of the same scantiness and form stands at right angles behind, projecting like two wings. The part on the left contains the sleeping and dressing rooms, and on the right the library and two antichambers for domestics. Two smaller buildings separated from the house by a sort of alley served Generals Gourgand, Montholon, and Les Cases, as residences, and are now converted like the sleeping-room of the Emperor, into stables containing hay and other kinds of farming stock.

Every one who visits this spot, cannot but regret that it has not been

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kept in the same order as when Napoleon lived there : the chief residence like the others, is built of slight planks, and the whole forms a mass of little rooms without any order or regularity, roofed over with battens called "Shingles," covered with a brownish yellow plaster. The adjoining buildings are covered with tarred paper, which must have been very troublesome to the residents, for the heat of the sun drew out the tar, leaving free ingress for heavy rains ; the smell must have been very disagreeable to those accustomed to the gorgeous saloons of Paris. Every one who sees these decayed houses, must acknowledge that Napoleon and his faithful followers were badly provided for. The building with all its surrounding dwellings occupies a space of scarcely 200 feet. In the rear is a garden in which the Emperor often worked, now wholly gone to waste.

Close to this old house is an observatory, on which is a telegraph, commanding an extensive view over the wide spreading ocean, while its brilliant azure seems scarcely parted from that of the sky, and a passing vessel fifteen miles distant appears as a mere spot upon it. In the time of the illustrious captive, it was in connexion with a telegraphic chain which encircled the island, and gave every information to the governor. The multitude of names cut in all directions about the house, bear witness of the interest all have taken in visiting this place.

From hence the visitor proceeds to Napoleon's new residence, which as he predicted was furnished after his death. It is situated about three hundred yards northward from the old one. This would have been a very comfortable dwelling for him, a handsome and roomy house built of stone, containing large airy chambers, verandah and pleasure grounds. It was inhabited by an English Naval Officer who had charge of the observatory, erected close to the building. Near to this habitation is a small wooden house which was the dwelling place of General Bertrand and family. Longwood is 4,760 feet above the sea, and consists with Deadwood (note, Deadwood was formerly called Greatwood, and consisted of a forest of fir-trees now all dead and removed ; hence it was called Deadwood,) of about 1,500 acres, covered with grass and corn. It is fully exposed to the south-east wind ; water is only obtained by means of pipes leading from the hills. There is scarcely any foliage excepting in the vicinity of Napoleon's old house, where a hedge and some shrubs are seen, with a few fir-trees scattered here and there.

Having visited the neat enclosed flower garden of the new house, and got rid of various sixpences for bouquets to poor little girls who offered them, we return to Hutsgate, part of which road leads to Sandy Bay, leaving Napoleon's grave and valley to the right. The distance to it is about one hour and a half, four miles and a half along a road interrupted by gates, over hills and dales, passing through the most beautiful part of the island; valleys and hills covered with verdure, the former watered with winding streamlets flowing through the grass, beautified with cress and water lilies, while the banks of the road are covered with geraniums and blackberry bushes which in proper season are weighed down with fruit. A number of houses and plantations seen through a variety of foliage make a most agreeable diversity of scenery, and every one pass-

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ing this way who has any love for the beauties of nature, must be enraptured with the prospect. All around on the heights and in the dales, cattle are seen grazing, every spot not built on being luxurious pasture land. Here and there stand hayricks, while the newly cut grass lying in the fields affords a delightful odour. After a short drive this beautiful view is shut out by a hill, and all on a sudden the impressive and interesting scenery of Sandy Bay appears in view, arresting the attention. From the road may be observed (several hundred feet below,) a fruitful landscape interspersed with plantations and houses, beautifully situated with the sea in the distance.

At this place also, we had a fine view of the mountains, commonly called Lot, and his housekeeper and four children, raising their high peaks aloft, the first 1,444, and the second 1,423 feet high. That extraordinary peak is passed along a narrow road, sloping beneath a green mountain pass 2,215 feet high; from thence upwards through another, terminating in a fir-tree forest. Riding along this road a dull and rumbling sound is heard beneath. We soon arrived at the end of this grove, having then again a view over a valley interspersed with several roads leading to different villas, &c.; beneath is a running stream flowing to James Valley, forming the waterfall at that place. Plantation House is situated here, the residence of the Governor, Major-Gen. Sir Patrick Ross. It is a handsome building, with a pretty garden surrounded by trees. Behind it is a church on the rising ground, the second in the island. Plantation-house is on an eminence about 2,000 feet above the sea; it is approached first by a beautiful road, leading through a wood on each side, planted with geraniums and other pretty flowers, and further on, on the right hand a view may be had over the valley, until Red Hill House is gained, which is about half an hour from Plantation Hill. Ladder-Hill is a short three-quarters of an hours' drive from here, over an inclining road along High Knoll, through an interesting part, the beauties diminishing more and more. On Ladder-Hill is a strong battery as before mentioned, public houses and other dwellings, with an observatory and telegraph. From hence, after viewing the roadstead and vessels, and the long ladder, we return through the said zig-zag path and arrive, after four or five hours absence, again at James Town having made the principal tour round the island. At Mr. Solomon's will there be found as usual a good English dinner about this time. After dinner the custom is to take a stroll through the government garden, round the walls, &c., which are frequented by the *beau monde* of the island. The evenings are very quiet and little stirring save a friendly meeting.

The following morning after breakfast, which usually takes place at half-past 8, at Mr. Solomon's, a walk through the town and valley in quest of the waterfall and adjacent beauties, repays the visitor's curiosity. But in the town there is little to see worthy of notice. The market place is passed on the right hand, opposite which is a tolerably large shop. As before mentioned, numerous beer shops, small shops, also the parade-ground, hotel, botanical gardens, and hospital, from whence you arrive at the delightful house and grounds occupied by Mrs. Ben-

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nett, the widow of an officer; a lady who is deservedly esteemed by all who know her. The road beyond becomes more difficult, and a little beneath the Briars a vineyard is passed, producing grapes of fine quality. From here to the waterfall, being at the end of James Valley, the road changes to a narrow path, very slippery and rather difficult footing. After a walk of one hour and a half to two hours we were glad to find a resting place, at the foot of a perpendicular rock forming a natural basin where the waters meet, falling from the rocks a couple of hundred feet. By continual rains the fall is rendered strong, but in fine weather is so light that it resembles more a drizzling shower. Resting on the stones we were delighted with a view of the ocean and the rugged lava masses, while the clear, cool waters, and cresses growing in it were agreeable and refreshing. A short distance from this spot in the neighbourhood of the vineyard are several troughs into which the mountain water is received, and from which by well built conducting pipes is carried under ground through the town to the landing place for the use of ships.

The water is very pure, and good, and kept in large quantities. It is reckoned that every minute nearly 1,400 cans are received, whereby 300,000 can be supplied daily to the shipping. It is carried on board by vessels, from whence it is pumped out into the tanks on board and done very speedily. After returning to the town and partaking of refreshment, we paid a visit to the well stocked library, the entrance to which is by a garden. St. Helena has little else of much interest to be seen than our ramble afforded, and after forty-eight hours sojourn we returned on board fully satisfied, and anticipating our arrival at home.

Harbour Regulations of St. Helena.

Art. 1.—The commanders of all vessels are obliged to make over to the collector a manifest of freights for St. Helena, besides a list of passengers and luggage, the goods coming from Great Britain and Ireland to be opened in the entrepôt and also to give notice before they unload. A penalty of £100 is inflicted in neglect of it.

Art. 2.—No boat or other vessel, except the pratique boat shall be allowed alongside a ship newly arrived before a communication has been allowed by the medical inspector, and which will be made known by hoisting a white flag on the main-top-gallant-mast-head.

Art. 3.—Every ship displaying a yellow flag at the fore-top is in quarantine.

Art. 4.—Every commander of a ship must give twenty-four hours notice to the Secretary of Colonies before his departure, but if he wishes to leave again within the twenty-four hours after arrival, immediate notice must be given; neither may he take any persons whatever off the island without the knowledge of his excellency the Governor, or Colonial Secretary.

Art. 5.—No boat is permitted to make fast to the buoy or buoy-rope, neither to the crane nor to the waterman's place while any other boat is unloading, loading, or letting in water. Neither shall any boat so loading or unloading be allowed to remain over a reasonable time.

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Art. 6.—No boat shall be allowed to remain at the steps of the landing place taking in passengers' baggage longer than necessary.

Art. 7.—No boat shall be allowed to remain fast to the steps longer than absolutely necessary, but remain a short distance off in order not to prevent other boats from landing.

Art. 8.—No gunpowder is allowed to be landed without four hours notice being given to the Officer of Artillery or Harbour-Master.

Art. 9.—No boat whatever may land any person or luggage from any ship, except H.B.M. ships, on any other part of the island than James Town without having special leave.

Art. 10.—Every person visiting a vessel on board of which there is an infectious disease, must remain on board until such disease has left, or go with the ship to such place as the Governor may think fit.

Art. 11.—No fish may be landed at the innermost steps nor any offal left behind at the landing place, neither is any bathing allowed in the harbour, nor bones of large fish or carrion to be thrown into the sea within a quarter mile of the shore.

Art. 12.—Boat hire:—

	£	s.	d.
For one person to or from on board	0	1	0
„ more than one, each	0	0	6
„ every package under 25lb., (English)	0	1	0
„ every package above 25lb., and under 100lbs.	0	1	0
„ every additional 100lb.	0	0	6

Art. 13.—Licensed boats must not refuse between sunrise and sunset to take any one on board a vessel at anchor, neither refuse to wait alongside when requested.

Art. 14.—All vessels in quarantine, must be moored on the west-side of the harbour, under the surveillance of the harbour-master.

Art. 15.—Commanders of vessels who come for water must send in a written request signed by themselves, to the office of the harbour-master, specifying the quantity required. The Time-ball* at James Town falls at 12 o'clock, as at the island, or 1 o'clock of Greenwich, 15° 55′ 26″ south latitude, 5° 42′ 30″ west longitude, or 22m. 50s. in time. For the information of commanders and passengers, it may be observed that the gates of the town are closed, and the bridges drawn up at the firing of the evening gun, and remain so until the morning gun fire. Those who wish to return on board must leave the town before this takes place.

The Rollers at St. Helena.—As at Ascension and other places there is sometimes a tempestuous sea on the shore, that precludes all possible communication between the vessels and the land. The English call it, "*the Rollers*". The prevailing months are from December to April, though they happen also at other times.

I experienced them as I lay in St. Helena roads and can bear witness that they form one of the grandest sights that I ever saw. A slow, high, rolling wave rises in the north-west flowing towards the island, and

* See *Nautical Magazine*, 1836.—Ed.

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before any precaution can be taken breaks upon the shore with a heavy surf. The atmosphere is bright and clear, the barometer remains as ordinarily and the sea smooth in the distance, the waves being scarcely ruffled by a cats' paw. In an instant, all is confusion around, from a sudden, upheaving wave rolling onwards and breaking on the outer shallows with tremendous force. Instantly the surf follows, one wave succeeded by another with redoubled force towards the shore breaking upon the rocks. The landing then is very dangerous, and all plying between the harbour and shore is stopped. The rollers or extraordinary high swells, first appear in the form of a high, steep, long mountain ridge and gather fresh strength as they approach, astonishing the beholder; water mountains seems to follow each other with redoubled violence until they reach the receding waters from the shore, meeting them as walls, and with irresistable fury dash over the beach. The shore is a mass of foam, while the houses in the town are shaken almost to their foundations. Such was the case in February 1838, while I was on board the *Elizabeth*, and when the spoondrift came flying over Mr. Solomon's house like a shower of salt water. At the same time all was under water on the weather side, and every now and then the rollers swept over the landing place to such a height, that the force of them drove the heavy crane used for unloading and loading vessels about like a weather-cock. A few years subsequently, I lay there in the *Menado*, and had an opportunity before I arrived on board of witnessing a similar scene. The vessels were riding at anchor with a light but high running swell while a few cables' lengths off the heaviest hurricane seemed to rage, presenting a terrific appearance.

The most striking scene was the mountain of waters rolling in with speed against the wind, their towering tops curling into foam like white feathers and plumes shining through the light, carried about in all directions, forming a dancing mass above the scene, while the sun's rays shining through them depicted all the colours of the rainbow. In Feb. 1846, there was a similar visitation attended with much damage, when many of the condemned slave vessels were stranded and lost. The landing place and crane were washed away, the iron water reservoirs and their small houses totally destroyed, the damage done in the island was estimated at about £20,000. Vessels that were at anchor in the roadstead outside the twelve fathoms depth escaped unhurt, and their crews were spectators of this scene of devastation. The wind for several days before this disaster was from the north-west with thick showery weather.

(Signed) F. FOKKENS,
Captain, Mercantile Marine.

[Translated from the Verhandelingen Berigten.]

ARCTIC PAPERS.—*The Report of the Enquiring Committee.*

WE now present our readers with the report of the Enquiring Committee on the subject of the late Searching Expedition. It is the deliberate conclusion of five experienced naval officers, who by personal enquiry have

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thoroughly informed themselves of the facts which they had to investigate; and it has received the concurrence and approval of the Board of Admiralty. The evidence which accompanies it betrays too clearly, in the very first few pages, the cause of its origin; for there are unequivocal indications even there of a spirit little calculated to promote the great objects in view. Assertions, contradicted and unsupported by any kind of evidence, *there stand recorded!* We gladly turn from them with the hope that our naval officers in future will be left to do their own work. They have done it well in this instance, as they have before, and pity it is that in this instance also, they had not had more to do.

The following letter convened the committee:—

The Secretary of the Admiralty to Rear Admiral Bowles, C.B., M.P.

Admiralty, 22nd October, 1851.

SIR.—I am commanded by my Lords Commissioners of the Admiralty to acquaint you, that they are pleased to appoint a Committee, consisting of yourself and the following officers, namely—

Rear Admiral Arthur Fanshawe; Captain Sir Edward Parry; Captain Frederick W. Beechey; and Captain Sir George Back. To this committee, which is to meet at this office at eleven o'clock, A.M., on the 24th instant, their Lordships refer all the papers and documents respecting the late Arctic Expeditions, with power to call for any other papers which they may require, and, to call for and examine any officer or other persons whose testimony they may consider necessary.

My Lords desire that the Committee will direct their attention to, and report on the conduct of the officers intrusted with the command of the expeditions and the several exploring parties, and whether everything was done by them to carry into effect their instructions, and to prosecute the search for the missing ships. In respect to this part of the enquiry, their Lordships direct the particular attention of the Committee to the return of the expedition from Cape Riley in this season, and they desire that the Committee will specially report whether it would have been of any advantage if Captain Austin or Mr. Penny had remained a further time to continue the search in that direction.

My Lords further desire that the Committee will consider the results obtained by the late expeditions, and report what benefits can be expected from any further research, with the means and directions in which the Committee are of opinion that such search should be prosecuted.

I am, &c.

(Signed) J. PARKER.

The following is the report made in pursuance of the above letter.

Report of the Arctic Committee.

Admiralty, Arctic Committee, Nov. 20th, 1851.

1. The committee appointed by their Lordships' letter of the 22nd October to inquire into and report on the conduct of the officers entrusted with the command of the late expeditions in search of Sir John Franklin, and whether everything was done by them to carry into effect their instructions, and to prosecute the search for the missing ships, commenced their proceedings on the 24th ult.; and conceiving that the only distinct inculpations are those contained in Mr. Penny's letters to their Lordships of the 15th September and 10th October, we consi-

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dered it our duty to direct our attention in the first instance to this part of the subject, and we accordingly examined Mr. Penny himself and all the principal officers of the *Lady Franklin* and *Sophia*, with the view of ascertaining satisfactorily every circumstance connected with the exploration of Wellington Strait, and the channels discovered above it, and how far Mr. Penny's subsequent statements are in conformity with those he so distinctly expressed in his letters of the 4th and 11th of August, addressed to Captain Austin; and having obtained all the information in our power, and most carefully considered the whole question, we are of opinion that Captain Austin could only put one construction on Mr. Penny's two letters referred to, and that, having been thus assured by him that the open water found above Wellington Strait was (to use his own expression,) from "the fearful rate at which the tide runs (not less than six knots) through the sounds that divide the channel, dangerous even for a boat, much more to a ship, unless clear of ice, which from its present appearance would not be so that season," impracticable for navigation at that time, and that the shores and islands on both sides had been thoroughly examined by the exploring parties, without any trace of the missing ships being discoverable, we do not think Captain Austin would have been justified in commencing a fresh search in a direction, concerning which he naturally considered himself to have received such authentic information.

2. It will be observed that in Mr. Penny's letter of the 4th of August, 1851, (from which we extract the preceding paragraph), he distinctly acquaints Captain Austin of his fixed determination to return immediately to England, and that nothing is to be found in it in any way expressive of his wish for a further search in Wellington Strait, and the channels connected with it. In this journal, also, several remarks occur, all equally discouraging and fully indicative of his opinions at that period: and we can only account for his subsequent change of language on his arrival in England by his considering (as he himself states in his evidence) that "he found everybody disappointed;" that it had been said, "more might have been done;" and "that he therefore wished to have the means of going out again;" but we are bound to state that the evidence brought before us has not, in our opinion, corroborated the statement that he expressed to Captain Austin at the time any such sentiments; and it will be seen that Captain Austin distinctly denies having received any communication to that effect.

3. Some desultory conservation, however, certainly appears to have taken place on this subject when Captain Austin and Mr. Penny met on the 11th of August, 1851, and it was for this reason that the former (very prudently and properly, in our opinion) pressed Mr. Penny so strongly for his opinion in writing.

4. We think, therefore, that Captain Austin could only form his judgment on Mr. Penny's written communications, which although very laconic, were sufficiently explicit; and that, under all the circumstances of the case, much weight is due to the feeling expressed by Captain Austin in his evidence, that as Mr. Penny's expedition was, equally with his own, equipped at the public expense, and receiving its orders from the

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Admiralty, although independent of his authority, he considered himself bound to abide by the strongly-expressed opinion of the officer who had, by mutal agreement, undertaken that particular portion of the search, that "all had been done which it was in the power of man to accomplish."

5. We beg to remark on this part of the subject, that although Mr. Penny endeavours to draw a distinction between Wellington Strait and the channel to the north-west, which he has since named Queen Victoria Channel, no such distinction appears in the track chart delivered by him to Captain Austin at the time, and which we annex to this report; and we therefore, think that Captain Austin could not fairly be expected to recognise any distinction between the upper and lower parts of this channel.

6. It appears to have been under this impression, which we think Captain Austin fully justified in entertaining, that, after finding Wellington Strait closed, the ice still presenting the same impenetrable barrier it had done in 1850, he decided on occupying the remainder of the navigable season in the examination of Jones Sound, to which inlet his own instructions, as well as Mr. Penny's, directed attention, but which the latter had been unable to explore in the preceding season.

7. We think that considerable benefit might have arisen, especially with reference to future operations in Wellington Strait, if one of the expeditions had remained near the entrance about a fortnight longer, in order to obtain the latest information of the state of the ice in that direction, and, therefore, the probable practicability of the navigation of this Strait, and we think this might have been accomplished by Mr. Penny without involving any serious risk of being detained during the winter; but we are clearly of opinion that as no certain traces of Sir John Franklin's ships had been met with in any direction beyond their wintering place at Beechey Island in 1845-6, and no report of the route intended to be pursued by them could be discovered, after the most diligent and repeated search (thus leaving this question a mere matter of conjecture,) both Captain Austin and Mr. Penny were fully justified by the tenor of their lordships' instructions in not risking their detention in the ice during another winter; and we beg to add that all the most experienced Arctic officers in both expeditions appear to have unanimously concurred in opinion as to the expediency of returning to England.

8. With respect to the conduct of the officers intrusted with the command of the expeditions and several exploring parties, we most gladly express our highest and most unqualified admiration of the zeal, energy, intrepidity, and perseverance with which every individual amongst them performed their respective duties. They appear to have been animated by a common feeling of determination to endure every hardship, and brave every danger, in their endeavours to obtain some traces of their missing countrymen. The journeys accomplished under the most difficult and trying circumstances, far exceed both in distance and duration any to be found in the previous records of Arctic exploration in those parallels of latitude; and the arrangements made by Captain Austin and

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Mr. Penny were so well considered and so complete that all their parties returned (with only one exception) in perfect health, and without having experienced any sufferings beyond those which were inseparable from severe fatigue in such inclement regions.

9. With respect to the results of the late expedition as regards the search for the missing ships, on which their Lordships desire our opinion, we may remark that, in the first place, it is a matter of no small interest and importance to have ascertained with certainty the exact position in which they passed the winter of 1845-6, while the careful and minute exploration of the coast to the southward and westward by Captain Ommaney and Lieutenant M'Clintock, without discovering any traces whatever of Sir John Franklin, would seem to afford a very strong presumption that he did not pass that way; and conjecture, therefore, naturally turns towards Wellington Strait, to which it is well known he had often looked, as affording one chance of a passage to the north-west, and which we see by Mr. Penny's account of his examination of the upper part of the channel, appears to form at least a possible outlet in that direction.

10. It is not without considerable hesitation and anxiety that we proceed to reply to the last point on which their lordships request our opinion—namely, "What benefits can be expected from any further research, with the means and directions in which the Committee are of opinion that such search should be prosecuted."

11. We should deeply grieve at being considered capable of treating with coldness or indifference the natural and praiseworthy feelings of those who are still without certain information of the fate of their nearest and dearest relatives, who in this state naturally cling to hope "even against hope," and whose thoughts, as might be expected, turn eagerly towards further explorations in any and every direction; but we have felt at the same time, while considering calmly and carefully this difficult question, that we have an equally important duty to perform towards those brave and meritorious men whose lives must be risked in this arduous and perilous search, and to reflect in what manner it may be best conducted with a due regard to their safety.

12. Taking therefore, all these circumstances into consideration, we have, after a most careful and anxious deliberation, decided on recommending to their Lordships, that an expedition should be despatched next year to Barrow Strait, consisting of the same ships which composed Captain Austin's division—namely, two sailing ships and two steamers, with orders to proceed direct to Beechey Island, and to consider that harbour—beyond which we think one sailing ship and one steamer should on no account be taken—as the base of future operation.

13. We consider any further exploration in the direction of Melville Island, or to the south-west of Cape Walker wholly unnecessary; and we would therefore propose that all the strength and energy of the expedition should be directed towards the examination of the upper part of the Wellington Strait; and we are of opinion that by the adoption of the same careful and well-considered arrangements which were attended by

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such satisfactory results on the late occasion, this examination may be effected without any serious risk of loss or danger.

14. If, on arriving at the proposed rendezvous early in August, the barrier of ice at the entrance of the Strait renders any attempt to penetrate it unsafe or imprudent, it may perhaps still be possible to convey boats on runners or sledges, or by any small "lanes" which may offer, and launch them into the open water above, and by this means depôts of provisions may be advanced to the most convenient points, and such further information obtained during the remainder of the navigable season as might very much facilitate the operations of the ensuing spring.

15. These operations must, in that case, be commenced as early as possible in the season of 1853, and pushed forward with as much rapidity as is consistent with prudence, it being clearly understood by all the exploring parties that they must return to the depôt at Beechey Island in good time for their embarkation by the middle of August at latest. The object in view would be to examine the upper part of Wellington Strait, as far beyond Mr. Penny's north-western advance as possible; and if Sir John Franklin did really proceed in that direction, it appears highly improbable that some traces of his expedition should not be discovered by the exploring parties in their search.

16. If on the other hand, Wellington Strait is found open and navigable on the arrival of the expedition in the summer of 1852, we think one of the sailing ships, with a steamer, might proceed at once to take advantage of this opportunity, if the officer commanding should judge such a measure safe and prudent, and be thus placed in winter quarters in a more favourable position for commencing the land search in the spring of 1853; but with the most distinct injunctions not to advance to such a distance as to endanger their return to the depôt, or their communication with it in that year; and it should be enjoined with equal strictness that, in the event of any irreparable disaster to the ships so proceeding, or if they should be too firmly fixed in the ice to be extricated during the summer of 1853, they are to be abandoned, and the crews brought down to the depôt.

17. It is, however, proper to provide for one possible contingency—namely, that of the difficulty of travelling at a late season rendering the retreat of the crew to Beechey Island more hazardous to their lives than their remaining by the ships (if they are only frozen up) another winter; and in that case the division at Beechey Island, which will be still amply provided with provisions, &c., must remain also until the following year; but this is, we hope, an improbable supposition, and our confident belief is, that with the improved equipments and appliances of all kinds which past experience will dictate, such an exploration may be made in the early part of 1853, as to enable the whole expedition to return to England before the close of the navigable season.

18. It is obviously impossible to provide in a report of this kind for more remote and less probable contingencies; but their Lordships instructions to Captain Austin (Par. 4 and 7) contain all the discre-

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tionary power with which an Officer under such circumstances can be entrusted; and we conclude they will be embodied in any future orders on the same subject.

19. We have thought it right to request from the several gentlemen named in the margin* their opinions on this interesting, but most difficult question; and we annex their replies, to which we beg to call their Lordships' attention.

20. We have also requested from Captain Austin and the Officers specially employed in his travelling parties† such suggestions as to practicable improvements in equipments, clothing, and provisions, as their recent experience so well qualifies them to offer. They are annexed to this report, and will be found of considerable importance.

21. Although our instructions do not advert to the report of the loss of the missing ships received from an Esquimaux named Adam Beck, and to whom Sir John Ross in his evidence still attaches much weight, we beg to state that a paper written by Adam Beck, in the presence of Sir John Ross and Captain Ommaney, and purporting to be the substance of information communicated to him by another Esquimaux, now in England, named Erasmus York, on the subject of the loss of the ships and the murder of the crews, has, on being translated before us by a Moravian missionary, well acquainted with the Esquimaux language, proved not to contain a single word relating to this occurrence.

22. Adam Beck's subsequent deposition, which was sent to Copenhagen for translation, has not yet been returned; but if their Lordships should consider any further inquiry necessary, we would only express an earnest hope that it may be conducted separately, and not allowed to interfere with the early arrival of the proposed expedition in Barrow Strait.

23. With respect to the efforts now making to afford relief to the missing ships in the direction of Behring Strait, we do not venture to offer any suggestions beyond a hope that, until further accounts are received from Captain Collinson and Commander M'Clure, the *Plover*, may be kept fully provisioned.

We are, &c.,

WM. BOWLES, *Rear Admiral.*	W. E. PARRY, *Captain*
ARTHUR FANSHAWE, *Rear Admiral.*	F. W. BEECHEY, *Captain.*
	GEORGE BACK, *Captain.*

To J. Parker, Esq., M.P., &c., Admiralty.

The Secretary of the Admiralty to Rear Admiral Bowles.

Admiralty, Dec. 5th, 1851.

Sir.—My Lords Commissioners of the Admiralty having received the

* Rear Admiral Sir John Ross, the Rev. Dr. Scoresby, Captain Austin, Captain Kellett, Captain Ommaney, Sir John Richardson, Mr. W. Penny, and Mr. A. Stewart.

† Captain Ommaney, Lieutenant M'Clintock, Lieutenant S. Osborne, Mr. Bradford, Surgeon, and Mr. Brooman, Paymaster,

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Report of the Committee of Naval Officers, appointed to inquire into and report on the conduct of the officers intrusted with the command of the late expedition in search of Captain Sir John Franklin and party, and whether everything was done by them to carry into effect their instructions, and to prosecute the search for the missing ships, I am commanded by their Lordships to request you will accept for yourself, and convey to the other officers of whom the Committee was composed, the best thanks of the board of Admiralty for the ability, intelligence, and zeal, with which the inquiry has been conducted.

My Lords have perused with the greatest interest the Report, as well as the evidence which the Committee have thought fit to take upon the subject, and have much satisfaction in expressing their entire concurrence with the Committe in the opinion expressed by them of the conduct of Captain Austin, and the officers engaged in the recent expedition.

I am, &c.,

(Signed) J. Parker.

An Appeal to the Inhabitants of the United Kingdom, for the Provision of Homes for our Sailors.—*By a Blue Jacket.*

The necessity of these institutions is now so obvious, that in a nation like Great Britain the claims of seamen to general sympathy and assistance only require to be brought prominently before the public mind to accomplish that end. The character of seamen possesses many striking features fitted to secure respect. They are, as a class, bold, brave, and generous; but, as their occupation excludes them so much from the rest of mankind, they are comparatively totally ignorant of the social relations of a community on shore. By reason of their candour and openness of character, they are easily imposed upon, and become in general the dupes of the designing from the moment they land.

Since the general peace, considerable exertions have been successfully made at various ports to impart to them religious instruction, and to effect this praiseworthy object many associations have been formed, denominated "Seamen's Friend Societies." Excellent as these no doubt are, the experience gained of late proves that these societies are greatly defective when not accompanied by the necessary adjunct of a Sailors' Home. Without this useful institution the efforts made to inculcate religious instruction are greatly neutralised, if not rendered altogether abortive. What otherwise can be expected from those who may be domiciled in a boarding-house, where dissipation and low debauchery impregnate the atmosphere, and where the main object is to deprive as quickly as possible the seamen of his hard-earned wages. The value of seamen may be briefly stated:—They are, under Providence, the great connecting link of the nations of the world; all countries should, therefore, be interested in their welfare; to their instrumentality we are indebted for many of the comforts and luxuries which we enjoy; how often do our tables bear the produce of the East and West Indies, and other distant countries, which have been brought to us by means of their efforts, and in accomplishing which they are exposed to storms,

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changes of climate, and all the various dangers incident to a seafaring life. With the extended commercial machinery of modern times it may appear while we are enjoying our comfortable meal, in one sense, as if we individually traded directly with those distant regions, the produce of which may be before us, and which is obtained by us without trouble and at a comparatively small expense. We should reflect on the toil, privations, and labour that is required in conveying such necessaries and luxuries to us. These considerations should, at least, induce us to sympathise with the men who devote themselves to such a hazardous profession, and surely in addition to their hard-earned wages we should rejoice to welcome them to port, to guide, instruct, and protect them from those who would deceive and plunder them, and in endeavours to do them all the good in our power while they continue under our influence. In the history of our sea-girt island, seamen have never been wanting to guard our commerce and protect our shores.

Let us for a moment reflect on the Great Exhibition of all Nations of 1851, all the plans about which would be unavailing without the instrumentality of seamen, and lastly, we may ask, who conveys the Christian Missionary to his distant post? how are the blessings of Christianity and civilisation to extend without their aid? By steady and preserving efforts to advance the character of British seamen, we tend to advance the national character, of which they are, in one sense, the representatives in foreign climates. To evince our sense of their value it is our duty and interest to have Sailors' Homes at every seaport in the United Kingdom, where seamen could be boarded at a just and reasonable charge, their property taken care of, and encouraged to preserve their earnings by means of a Savings' Bank, and where, at the same time, themselves should be given every facility for their improving their minds and advancing their professional character. A register being kept of the particulars of each person, where could the shipowner better apply for a crew than at the Sailors' Home?

The Mercantile Marine Act recognizes these institutions, and the manifold advantages they will afford seamen generally. It would be well for shipowners to unite and establish Homes at each of their seaports. Let us never forget that we have great maritime rivals on the other side of the Atlantic, who are so alive to the advantages of such institutions, that for several years there have been Sailors' Homes, conducted on excellent regulations, for the comfort of seamen, in full operation in several sea-ports in the United States. May not this foresight of the Americans and our neglect operate frequently in inducing our seamen to engage in the service of a foreign nation? Repeated appeals, by means of the press, are necessary until we see Sailors' Homes as common as Custom-houses. The recent benevolent exertions of Captain Hall, R.N., for the purpose of establishing Sailors' Homes, shows what can be done by one person, and what might we not expect by various combinations of persons of influence? Let us act justly to our sailors.

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Sailors' Home at the Port of Bristol.

A meeting of merchants, shipowners, and others favourable to the establishment of a Sailors' Home for this port was held on Tuesday, at the office of the Mercantile Marine Board, Princes-street. The object of the proposed institution is to "provide for seamen, whether men-of war's men, yachtsmen, merchant sailors, or shipwrecked seamen, of all nations, a respectable and comfortable board and lodging house, with medical attendance, where men, when paid off from their ships, passing from one port to another, on shore on leave, prevented by stress of weather from returning to their ships, discharged from hospitals, waiting for a ship, or in any way in need of board and lodging, will be received and entertained at as moderate a charge as possible, and where religious and useful instruction will be within their reach, without any additional cost—thus inculcating in them the performance of their duty both towards God and man; and where their friends may address them letters, or meet them whilst fitting out, or on their return from sea."

The chair was taken by P. W. S. Miles, Esq., M.P., who, having made a few observations upon the necessity and desirability of the proposed institution, called on

Capt. Hall, R.N., to address the meeting. The gallant captain said he was not much accustomed to public speaking, but still he would endeavour to explain the benefits of Sailors' Homes. The condition of sailors was well known, and until lately little or nothing had been done towards ameliorating it. Now, however, in many of the principal ports, such as London, Liverpool, Portsmouth, Dublin, Cork, Belfast, Glasgow, &c., Sailors' Homes had been established, and were found to have answered admirably, and had already proved a great boon to seamen when on shore. Capt. Hall then proceeded to describe his visits to the various ports of the United Kingdom for the purpose of aiding in the establishment of Sailors' Homes, and the success he had met with. In Liverpool a great mistake had been made by the committee, as they had expended a large sum of money in building, which he trusted would be avoided in this port, as it had nearly been fatal to the success of the institution. The lodging-houses of that port were of the most abominable kind, and, until the establishment of a Sailors' Home, the poor sailors had no other place to go to. In Dublin a Sailors' Home had been established, and that with the most beneficial effects. It had now been in existence two years, and, notwithstanding the difficulties with which the committee had had to contend, it answered its objects most admirably, the other lodging-houses becoming improved in their character and lower in their charges than before. In Belfast he had met with similar success. There the lodging-houses were of the worst description, and when a ship wanted to go to sea, the captain, from the want of such an institution as a Sailors' Home, had been to those low public houses in order to find his men. From thence he crossed over to Glasgow. He found that there had been, for a long time past, some talk of getting up a Sailors' Home at that port, but nothing practical had been

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done. When he arrived there he, as was his wont, inquired into the character of the lodging-houses, and found them to be very bad. About a fortnight previous to his arrival, he had been informed that a foreign sailor, who had taken refuge in one of them, was turned out into the streets with only a pair of trousers and an old red shirt, and that he was so ashamed that he shot himself. At Greenock, Stornoway, and Aberdeen, Sailors' Homes had also been established. At the meeting held at Aberdeen, Capt. Abbott, said he was indebted to the Sailors' Home in London for the proud position he held as the captain of a merchant vessel, as previous to his going there he had never known how to take care of himself. At Dundee there was also a Sailors' Home nearly ready for opening. Other ports he had also visited, and he trusted that in them he had also laid the foundation for similar institutions. At Portsmouth it was found that a Sailors' Home was very much needed, and on his return from Ireland one was commenced there. That institution had now been opened for some time, and so great was its success, that it was absolutely necessary that it should be enlarged. When there a few days ago the place was quite full. Several of the men had been on shore more than a month, and had visited the crystal palace five times; and some of them left the institution to go on board the *Centaur* with £10 or £17 in their pockets! He should like to know who had ever heard of a sailor going on board a man-of-war with £10 in his pocket before? Such a fact was a compliment to the service, to the men, and to the institution of Sailors' Homes. At Devonport an institution had been commenced, and there was not the slightest doubt of its success.

After mentioning one or two other places at which similar institutions had been established, or were much required, the gallant captain referred to Bristol. In no port was a Sailors' Home greater needed than in Bristol. Capt. Fisher, the superintendent of the police, had informed him that the character of the lodging-houses was very low, and this fact had been confirmed by all with whom he had conversed upon the subject. When a ship came from any foreign port, the sailors were surrounded by a dozen or two of what were called "runners," and these abominable crimps would use every artifice in order to get men to their houses. There was no respectable person from the Sailors' Home to meet them, and how then could they blame the poor fellows for going wrong when there was none to put them right. He was sure the establishment of the proposed institution would make a great change for the better; it did not require much money to commence, and it would be the means of conferring great benefits on a most deserving class of men. He had often been asked, when speaking upon this subject elsewhere, what religion do you mean to teach? His answer was none at all. They had nothing whatever to do with sect or creed. If a sailor of the Free Kirk of Scotland wished to go to a church of that persuasion, the porter would be instructed to give him information where to find it; and the same would be the case with a Roman Catholic, or the member of any other sect. They had nothing to do with proselytising, all they wished was to reform them from going to those horrible haunts they must go to if Sailors' Homes were not provided.

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F. W. Green, Esq., said every one connected with shipping must be aware of the great disadvantage sailors laboured under in not having a home to go to on the termination of their voyages. He anticipated all would cordially agree in promoting the carrying out of so desirable a scheme; and he, therefore, begged to move that this meeting, having heard the statements of Capt. Hall, think it highly desirable to establish a Sailors' Home at this port.

Mr. John Edwards seconded the motion. As an intance of the utility of Sailors' Homes he mentioned the case of a sailor who was with him when he commanded a vessel. This young man had learnt to read and write at the Sailors' Home, and, finding him attentive to his duties, he (Mr. Edwards) taught him navigation, and that young man was now the captain of a ship in this port. Too long had it been said of the sailor—

> "Where he goes, and how he fares,
> No one knows, and no one cares."

He hoped this stain would be wiped from Bristol, and that it would no longer be said that her citizens cared nought for poor Jack.

The resolution having been unanimously adopted.

R. Bright, Esq., moved the appointment of a committee for the purpose of obtaining subscriptions, &c., to carry out the foregoing resolution. He thought it quite time that something of the kind was done; and that as it was a question of benevolence and charity, it affected not merely the merchant and shipowner, but the general public, who he hoped would come forward and liberally support it.

Wm. Cook, Esq., seconded the resolution.

Mr. J. G. Powell said, before the resolution was put to the meeting, he wished to say a few words, and he claimed the liberty of doing so as a right, first, because he had been invited to attend, and secondly, because he was a sailor's son. He liked practical men and practical measures, and when a committee was proposed he felt bound to address a few words to them, because he had the honor, eighteen months or two years ago, of proposing a similar committee at a meeting held at the Royal Western Hotel, which was equally as well attended as at the present, and at which Mr. P. F. Aiken presided. Capt. Hall had talked about building a Sailors' Home, but he believed if they wished to carry out the project, they could begin at once without having recourse to building at all, since there were abundance of places which would suit for a temporary purpose, until the matter was more fully matured. With regard to the abominable character of the lodging-houses in this city, he could, from his own knowledge, most fully corroborate the statement of Capt. Fisher, that they were of the worst character. Capt. Hall had said that at Falmouth there was no place for the sick, but in Bristol he was happy to say there was an infirmary and an hospital where every care was taken of sailors, as well as other persons who might happen to be ill. Then came the question of religion. He trusted when they appointed the committee—which he sincerely hoped they would do—that they would avoid splitting upon the rock that the former committee did. He spoke now in the presence of Lieut. Wood

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and others who were upon that committee, and he would say that it was not enough for the porter to be instructed to show a member of the Free Kirk of Scotland or any other creed, the place where his particular sect met, but it was necessary that the committee itself should avoid allowing any sectarian differences it interfere with the object they had in view. The former committee had differed upon the point as to what should be the religion of the superintendent, and hence they came to nothing. He was sincerely desirous to see the establishment of a Sailors' Home, and for this reason he merely threw out this suggestion in order that it might serve as a warning to the committee about to be appointed. He should not have said a word but that there was the fact that the other committee, selected at a meeting as unanimous, and far more numerous than the present, had come to nothing, merely because they could not agree upon this one point. Fine speeches at public meetings signified nothing; what they wanted was particular measures, and he hoped therefore, the committee would allow no petty differences betwixt themselves to destroy the object they had in view.

Capt. Hall briefly explained that he had no wish to commence building. He was satisfied there were many places to be had in Bristol, which, with a little alteration, would make capital Sailors' Homes.

The resolution was then put and carried *nem. con.*

C. Hill, Esq., read the names of a number of gentlemen who should be elected as a committee to carry out the measures necessary for the establishment of a Sailors' Home. He had long wished that something of the kind should be commenced, and he was glad that circumstances now appeared to be favourable. He was sure it would prove a great blessing to the sailor, because it would be putting him in a position to acquire useful knowledge, and would offer him a comfortable and safe retreat from the dangers to which he was continually exposed. He should be most happy to do all he could to assist so desirable an object.

William Patterson, Esq., seconded the resolution.

Mr. Rowe before the resolution was put wished to make a few observations in reference to what had fallen from Mr. Powell. The committee to which he referred had not proved ineffectual from the cause named. It had not, however been dropped entirely, for the committee of the Bethel ship, comprising men of all creeds, were most anxious to see such an institution established, and a short time ago had asked him to collect information on the subject of Sailors' Homes with the view of commencing one on a small scale themselves. He had no doubt that the committee would be glad to co-operate with the one just appointed. It was desirable the public should know the sum likely to be required to set the thing afloat, and he therefore had calculated that a suitable building might be obtained at a rental of £100; the cost of fitting it up would amount perhaps to between £200 and £300; and for persons employed in connection with it say £200 more. So that supposing they had £500, they would be in a fair position to start for twelve months, reckoning the money received from the sailors for board, &c., as sufficient to supply the institution with food.

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After a few words from Mr. H. A. Palmer, the resolution was put and unanimously adopted.

The Chairman said, the real business of the meeting was now to be done: they wanted some money to begin with, and it was proposed to commence the subscription at once. He should have much pleasure in putting down his name for £50—(cheers.)

The subscription list was then handed round the room, and in the course of a few minutes the Chairman announced the gratifying intelligence that the donations amounted to £270; and the annual subscription to £35. He was afraid Mr. Rowe's estimate of the sum required was much too low, and this might perhaps interfere with the subscriptions. He should be better pleased if they could start with £1000, and an annual subscription of from £50 to £100, and in a city like this he saw no difficulty in the matter. In a short time it was to be hoped it would become self-supporting.

Mr. Ford said he had spoken to several gentlemen on the subject of the meeting, who, although unable to be present, had manifested a lively interest in it, and had procured pecuniary assistance.

It was then moved, seconded, and carried, that Messrs. Ford, Rowe, and Edwards, be a sub-committee to collect subscriptions, &c., and to report progress at their earliest convenience.

P. W. S. Miles, Esq., M.P., and R. BRIGHT, Esq., were then elected the president and vice-president of the proposed Institution; and the proceedings terminated with a vote of thanks to the Chairman.

We understand that the sum received in donations now amounts to upwards of £300; and the annual subscriptions have increased to £50.

[We propose keeping this important subject before us, and therefore invite communications upon it.—*Ed.*]

THE HASTINGS AND SPHINX HURRICANE *of the 30th of September, and 1st of October in the China Sea.*

[The following are instructive accounts of the same hurricane encountered by H.M.S. *Hastings* and *Sphinx* in the China Sea, and communicated to this journal by the Board of Admiralty. It will be seen on considering the changes of the wind, experienced by both ships, that the focus passed to the northward of them on its westerly course, and as these storms seldom cross the China Sea southward of south-west, when the *Hastings* had her first storm wind at N.N.W., (noon of 30th,) and the *Sphinx* hers at north-west, had both ships stood out of their course, S.E. or E.S.E., the focus would have passed still further from them. That it approached them rapidly is evident, and accounted for by both standing to north-east. But the dangerous shoals of the China Sea, being to the southward required much caution in making any southing, and a useful lesson is thus afforded of how best to avoid the focus of a hurricane on one hand, and a navigation rendered dangerous by shoals on the other. The seaman who is conversant with the subject will readily see this on constructing the figure for himself, as indeed all seamen should do.—ED.]

H.M.S. Hastings, Hong-Kong, 15th October, 1851.

SIR.—In compliance with your Excellency's memorandum of the 31st instant, I have the honour to inform you that, on the 30th ultimo, Her

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Majesty's ship under my command, (while on her passage from Singapore to Hong-Kong, in company with H.M. steam vessel *Sphinx*), encountered a typhoon in the China Sea.

The weather up to 4 A.M. of the 30th, had been generally fine, and the barometer was then standing 29·67; after that hour it was observed to be gradually falling, the weather becoming squally, with a thin haze and a low rapid scud.

At noon, she was in lat. 12° 20′ N., and long. 113° 35′ E., under double reefed top-sails and main-top-gallant-sail, on the port tack, standing N.E., with the wind N.N.W., barometer 29·61. The weather overcast with squalls and rain. At 1h. 30m. P.M., under close reefed top-sails and courses;—struck fore and mizen-top-gallant-masts.

2h. P.M., the barometer had fallen to 29·46 the weather overcast and squally.

6h. P.M., barometer 29·10, the force of the wind rapidly increasing, furled the main-sail, fore and mizen-top-sails, sent top-gallant-yards and masts down on deck, got small-sails out of the rigging and tops, and unbent the jib.

6h. 30m. P.M., lost sight of *Sphinx*.

7h. P.M., furled the fore-sail, double breeched the guns, and secured them with hawsers; 8h. 45m. clewed up main-top-sail which was soon blown away from the fourth reef; 9h. 30m., the wind shifted to W.S.W. blowing a heavy gale, force 10; the weather was overcast with violent squalls and heavy rain.

10h. P.M., the spare jib-boom was washed away from the main chains.

10h. 30m. P.M., carried away jib-boom and starboard bumpkin.

11h. P.M., a few flashes of lightning, with heavy rain, force of wind (10).

11h. 10m. P.M., blew away main-stay-sail and hauled down the fore; (ship under bare poles).

Midnight, wind south, force 11; barometer standing 28·91.

Oct. 1st., 2h. A.M., wind south-west, force from 11 to 12; barometer 29·93; aneriod 28·68—(the course of the typhoon supposed to be passing) 4h. A.M., wind S.W.b.S., force 10; barometer 29·92, aneroid 28·82.

5h. 30m., A.M., first gig washed away from the davits.

8h. A.M., wind south, force 9 to 10; barometer 29·29; heavy squalls and rain with a short heavy sea—up runners and tackles.

10h. A.M., barometer 29·45; squalls and rain. Noon, wind south, force 8, squalls moderating; barometer 29·45.

2h. P.M., wind S.S.E., force 7; bore up and made sail to close reefed fore-top-sail, and fore and main-stay-sails; standing N.N.E.; barometer 29·41.

5h. P.M., bent and set close-reefed main-top-sail.

6h. P.M., wind S.S.W., force 6.

8h. P.M., wind S.E., force 5.; barometer 29·64.

Oct. 2nd. 2h. A.M., wind E.S.E., force 5; barometer 29·70.

8h. A.M., made sail to top-sails and courses. From this hour the wind remained E.S.E. until 8h. P.M., when it fell dead calm; the weather continuing cloudy. Barometer 29·80.

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The calm lasted six hours, after which a light breeze sprung up from the northward.

(Signed) F. W. AUSTEN, *Captain.*

To His Excellency, Rear-Admiral C. J. Austin, C.B., Commander-in-Chief.

Her Majesty's Steam Sloop Sphinx, Hong-Kong, Oct. 5th, 1851.

SIR.—I have the honour to inform you that Her Majesty's steam sloop under my command, left Singapore at 11 A.M., on the 24th September, in company with His Excellency the Rear Admiral Commander-in Chief, to proceed to this place. On the 25th at noon, it being then nearly calm, we took the *Hastings* in tow, and towed her for two hundred and thirty-five miles till 7 A.M. on the 27th, when the wind being fair from south-west we cast her off, and kept company with her under easy steam and sail.

On the afternoon of the 29th the wind which had previously been W.S.W., backed wind to N.W. and N.; at daylight on the 30th the *Hastings* being on a wind, and the *Sphinx's* square sails bagging her to leeward, they were furled, and anticipating shortly a stiff north-east monsoon, the top-gallant-masts and yards were sent on deck.

At noon the barometer was still high 30·07, the weather looking a little unsettled, wind N.W., lat. 20° 20′ north, long. 113° 36′ east.

In the afternoon the mizen-top-mast was struck and jib-boom housed, wind inclined to freshen; *Hastings* in company, a mile to windward; proceeded to reduce sail and house top-gallant-masts.

We lost sight of *Hastings* at 6h. PM.; she was, when last seen, furling fore and main top-sails.

From this time the barometer began to fall rapidly, and the typhoon, for such from its extreme violence and decidedly revolving character I conceive I am justified in calling it, commenced in earnest. Wind N.W.

Soon after seven o'clock the inner jib-stay blew away; the gig was washed away from the stern about the same time. The fore and main top-sails which had been reefed at quarters, were both split at 8h. P.M.

At 10h. P.M., the typhoon was raging furiously; wind W.S.W.

At 10h. 45m. the port cutter was overwhelmed by the sea, and washed away; at 11h. the starboard cutter shared the same fate.

About the same time the wind suddenly lulled suspiciously for a few moments, and then shifting to the S.W., blew again with equal fury.

Perceiving that we were in the south-eastern quadrant of the storm, my object was to get away towards the eastward, we therefore endeavoured to keep her head E.N.E. At 1h. 30m. the ship was taken by the sea and headed West, all our efforts to get her head round were unsuccessful, and she remained on this course, and therefore pursuing the force of the gale till daylight, when a momentary lull and shift of wind enabled us to put her head the right way again.

At 1h. 45m., my private wherry, stowed on the port quarter, shared the same fate as the ship's boats and was washed away.

At 2h. 20m., the starboard after-broadside gun which had been secured in the position of extreme training, muzzle forward, was moved

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by the rolling of the ship (the after side tackle having become unhooked), and by the flood of the sea which was making clean breaches over the deck, to the position of extreme training, muzzle aft, and at the same time was thrown out of the trunnion boxes (the forelocks of the cap-squares being broken by the upheaving of the gun) and pitched overboard: fortunately this occurrence was seen and immediately reported at the time it happened; the breeching being immediately cut the gun was cleared of the side.

The barometer attained its minimum 29·15 at midnight, soon after it rose a little, and it is very remarkable that during the time we were following the storm with our head west, the barometer remained nearly stationary. As soon as we got her head to the eastward and steered away from the focus, the barometer rapidly rose, and the weather speedily mended, the wind drawing round to S.S.E.

I do not ever remember in the course of my experience, a gale so awful and violent in character. There was no thunder or lightning, but a great deal of rain in the middle watch. The main-mast which is rigged with chain rigging, worked much, so much so that I was apprehensive that we should lose it and took the earliest opportunity when daylight broke, of swifting the rigging in.

Daylight revealed a long catalogue of minor misfortunes; great part of the ship's company's galley washed away, port after-sponson started, many parts of the bulwarks washed away, both life buoys gone, quarter boats davits bent, fore-gaff carried away.

We saw nothing of the *Hastings* on the following day, 1st of October, or since. On the 2nd when observations were obtained, the lat. 15° 42′, agreed with the reckoning, but the long, 116° 55′ was 70 miles to the eastward of it.

I enclose herewith, an extract from the log, from midnight of the 29th to noon of the 2nd.

Her Majesty's steam sloop *Sphinx* anchored in Hong-kong Harbour, on the 4th, at 11h. 30m. P.M.

I have, &c.,

CHARLES F. A. SHADWELL, *Commander.*

Captain J. L. Massie, Cleopatra,
Senior Officer in China.

THE EUROPA STEAMER AND AMERICAN SHIP CHARLES BARTLETT.

(Present Lord Justice Cranworth, Lord Justice Sir James Knight Bruce, Sir Herbert Jenner Fust, and Sir Edward Ryan.)

This case is one of extreme importance with reference to the magnitude of the subject at stake; but it is a case in which, having heard all that can be said on the part of the appellants, and having had an opportunity, since the matter was last before this court, to consider the effect of the evidence adduced, their lordships have come to the conclusion, without any doubt whatever, that the judgment of the court below was correct, therefore we need not trouble the counsel for the respondent to address us.

It is to be observed that this is a suit instituted by the owners of the barque *Charles Bartlett*, against the steamer *Europa*, and there are several

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other actions to abide the result. That a most fearful collision did take place is a matter that admits of no doubt; there is no doubt that the *Europa* ran into, and sank the *Charles Bartlett*, with all her cargo, and the greatest part of her passengers and crew; for that the owners of the *Charles Bartlett* seek reparation, and before they can sustain this judgment in its integrity, they have to make out two propositions; first of all, that this was occasioned by the misconduct of the *Europa*, and next, that they were not to blame themselves. I wish to guard myself in saying they are to make out that, because I understand it is to be a matter of difference in the Court of Admiralty upon whom the onus lies; but it is not necessary to enter into the abstract question here, because their lordships have come to the clear conclusion that the *Europa* was to blame, and the *Charles Bartlett* was not. At all events the *Charles Bartlett* was not to blame in anything that contributed to the accident.

Now, with regard to the *Europa*, the way it was put by the learned Judge of the Admiralty Court is this; he says—"Was the *Europa* to blame for going twelve and a half knots an hour, during a fog, which it is admitted to have been, in the locality described? Secondly, whether she was to blame for not having an adequate watch? Thirdly, was there any neglect in the engineering department? Fourthly, whether the order given to starboard, which it is admitted was an erroneous order, was or was not carried into execution, so as to produce any effect? The fifth will be a general question, whether the collision was the consequence of this state of things?"

Now, the first question put is, "Was the *Europa* to blame for going twelve and a half knots an hour during a fog, which it is admitted to have been, in the locality specified?" Now, the report on that subject, if I may give that name to it, was, that no positive rule can be laid down as to the rate at which a steamer may or may not travel on the ocean; no positive rule can be laid down; and I think it may also be said, I do not know whether it does go to that length, that no positive rule can be laid down as to what rate a steamer may or may not go during a fog. Fog is a word which admits of such infinite differences of degree, that no rule can be laid down applicable to every case of every fog. But their lordships are of this opinion, that this may be safely laid down as a rule on all occasions, fog or clear, light or dark, that no steamer has a right to navigate at such a rate that it is impossible for her to prevent damage, taking all precaution at the moment she sees damage to be possible or probable; and if she cannot do that without going at less than five knots an hour, then she is bound to go at less than five knots an hour, as will probably be the case in coming up the Thames. In the middle of the Atlantic much greater latitude may be allowed, but neither in the Atlantic, nor any where else, can any ship be navigated at such a rate that it is impossible for her to avoid doing damage, discovering only the impendency of damage at the moment when it is impossible to avoid it.

Taking that as the turning point on which our judgment is to go, let us see what the evidence is on that subject. It appears by the log of the *Europa*, "3h. 30m., dense fog, could not see more than a ship's length ahead;" that is their own statement of the state of the atmosphere; they were going twelve and a half knots an hour. Was it, or was it not, possible in that state of things, to avoid running foul of the ship if they discovered at the distance of seventy-five yards from her own head a sailing vessel? I say seventy-five yards distant, that is about the length of the ship, or 100 yards? What is the evidence on that subject? There is a conflict of testimony. There have been examined ten witnesses on that point, six of them persons that were on board the ship, the *Europa*, at the time of this unfortunate accident. One is Douglas Reid, the Admiralty Lieutenant—he was in charge of the mails; Wardell, the second officer of the *Europa*; Coates, an able seaman; White, an able seaman; Fern, an able seaman; and Campbell, an able seaman.

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I understand not literally stop, but so as to get out of the way of doing damage, if she discovers anything within her own length. So say White and Fern, two of the able seamen. Coates, an able seaman, and Campbell, an able seaman, say that in their opinion she cannot do it if she is going twelve and a half knots an hour, and discovers something for the first time 100 yards distant; it is impossible to stop. The expression of another person is "Stop her, and get out of the way," and that is the meaning of all the witnesses.

Then, in addition to the parties on board the ship, they have examined also three captains of other ships belonging to the same company—Shannon, Lang, and Judkins—and all of them, without exception, say they conceive it impossible, discovering anything merely at the distance of a ship's length, to get out of the way. That is entitled to the more weight, because one of them, Shannon, begins by saying, "I think she could," but he corrects himself by saying on further consideration, "I think she could not." Of the same opinion is a person named Bellhouse, a passenger on board; so far as his testimony goes, she could not.

Take the evidence to be correct on that subject, that the *Europa* was navigated at a rate which made it impossible for her to avoid collision with a ship, discovering it only at the distance at which alone it could be discovered, it appears to us to follow, as an inevitable consequence, that she was sailing at a rate of speed at which it was not lawful for her to navigate.

But there is a little conflict of the evidence on that subject. Conflict of evidence is often a matter difficult to deal with, but, fortunately for the ends of justice here, it appears to their lordships that it will make no difference, because if the evidence of three of the witnesses be the correct view of the case, and if it were possible to avoid the collision, discovering the ship her own length off only, no further than that, then we come to the other point, why did not the *Europa* get out of the way? Therefore it appears reducible to the position quicunque via. The *Europa* admits herself, or it must be admited the *Europa* was materially to blame.

That being so, it is not necessary to discuss the other grounds of blame alluded to in the Court of Admiralty; but their lordships are of opinion that probably on the other points, certainly on most of them, the judgment was quite correct. I say the evidence on these points satisfies us she was to blame. Was she to blame for not having an adequate watch? It is proved, it was admitted by Dr. Addams, and it must be taken to be the fact, that there was only one eye looking out on the occasion in question. Without professing to know anything of nautical affairs in a ship going at this enormous rate in a part of the Atlantic, where—though there is a difference in the evidence—it was probable she would encounter other ships, it was very imprudent and improper not to have more than a single eye on the look out. The naval gentlemen whose assistance we have had, tell us that it is clearly their opinion that a ship under these circumstances ought to have had more than one eye looking out. If that had been so, I do not know that a difference of result would have happened, but it might have been so, and it is clear they were guilty of great negligence in not having a better look out,

Was there any neglect in the engineering department? If anything turned upon that some of us might have wished further time to consider the evidence, but if we are called upon to express our opinion off hand, we should say the preponderance of the evidence is that there was not sufficient attention. There should have been a person at the crank hatch to communicate the orders. That is the opinion we have formed; but if that had been any of the blame we attribute, we should have wished more time to consider it. It is idle, however, to stop to consider it in a case where the result must be the same, let it be one way or the other.

It is admitted that a wrong order was given to starboard the helm. There Lieutenant Reid says, he is of opinion that she could stop herself, by which

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is a doubt whether that was to any extent carried into execution. Certainly it was only to a small extent, if to any extent. It was a wrong order, and probably it a little interfered with larboarding the helm; probably to a minute extent indeed. Whether it contributed to the accident it might be unsafe to speculate upon. Whether it was executed is a matter on which we do not feel called to give a positive opinion, inasmuch as it would not have turned the case one way or the other.

For all these reasons their lordships have come to the conclusion that the *Europa* was to blame—very much to blame—on the grounds I have stated.

With regard to the *Charles Bartlett*, was the *Charles Bartlett* to blame? The questions put by the learned judge of the Admiralty Court are these:—Was she to blame for want of a good look-out? Was she to blame, in not having heard the *Europa* sooner; not sounding a horn, or any other neglect, or anything unseamanlike in any part of her conduct?

Now, the only part of the case in which there was any semblance of blame to be imputed to the *Charles Bartlett* was, the question of the alleged want of a sufficient look-out. On that point, all the evidence that there is tends to show most strongly that there was a sufficient look-out; but, undoubtedly, there was considerable force in the observations pressed by Dr. Addams, that the party who probably best knows about what sort of a look-out there was, has not been examined at all. That is a very fair and legitimate observation. We, however, have come very strongly to the opinion on the evidence, that there was a good look-out, and what we might have done as to examining the man, if we had thought this was a material question, it is not necessary for us to decide; because we have all come to the conclusion, that whether there was a good look-out is quite immaterial to the case, when we are of opinion that everything, whether there was a look-out or not, that could be done was done. We are clearly of opinion that the *Charles Bartlett* did everything which, under the circumstances, she was called upon to do; and that no look-out could have afforded the opportunity of doing more.

Now, the *Charles Bartlett*, it is to be observed, was under circumstances in which, according to the laws of navigation, she was entitled to keep her course. Of course it will not be understood that their lordships mean to lay down any rule—varying as it would from rules laid down before, and which are analogous to rules about keeping the road, such as are frequent at common law. Their lordships do not mean to lay down the rule that a ship, though entitled to keep her course, is to do so when under special circumstances it is obvious it will lead to, instead of avoiding, accident. All these general rules must be held to be rules bending to circumstances, but, *prima facie*, a party entitled to keep his course has nothing else to do than keep his course. That was the position in which the *Charles Bartlett* was placed; she keeps her course, and, according to the evidence, she states, that when the ship was at the distance of 300 or 400 yards, she endeavours not to insist on her right, but endeavours to prevent the collision by getting out of the way, and doing everything that could be done, beyond what a party entitled to keep her course, perhaps, was bound to do. That being so, we can impute no blame to her; and we are of opinion, that if all the passengers and the crew had been engaged in looking-out, it could have made no difference at all.

The same principal disposes of the point of whether she was to blame in not having heard the *Europa* sooner. Now, on that subject we think, with reference to that, the circumstance that she was keeping her course is very important, because a ship keeping her course is only bound to go on, and keep her course, not anticipating and watching that other persons are coming. If she had heard something was coming, she would have been entitled to consider that it would come so as not to do her damage. There-

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fore, it appears to their lordships that it is beyond the question, and is not worthy of attention.

With regard to the noise on board their own ship, it is suggested there was dancing and a violin on deck. I do not think that is made out. It was below, and whether it was going on at that time is not made out, but the noise that is made out, is the noise of coppering a rail. A ship that is lying her course in the middle of the day, if a rail requires coppering, is entitled to have it coppered. It is not pretended there was more noise than was necessary to copper the rail; therefore that could not be a matter of complaint on the part of the *Europa*. It is said, indeed, that the coppering of the rail took off the attention of one of the parties that ought to have been on the look-out—namely, the mate; and that he was not so engaged. But their lordships can pay no attention to that argument. The party looking-out might in a certain sense do the coppering. His business in looking-out was to walk with his eyes to the horizon; but that does not mean he is not to turn his eyes off and see what a man is doing. All these expressions, "look-out," are to be taken in the common sense. He might do that, and look after the man coppering the rail.

On these grounds their lordships have come to the opinion that the accident was without default on the part of the *Charles Bartlett*, and was through the neglect of the *Europa*. The consequence will be that the appeal will be dismissed with costs. The other cases will follow that decision.

Nautical Notices.

False Lights.—*New York, Nov. 3rd.*—Captain Bell, of brig *John French* from Carthagena, arrived at this port, reports false lights off Key West supposed to have been set by the wreckers.—*Shipping and Mercantile Gazette, Nov. 20th*, 1851.

The *Heber*, at San Francisco, on her passage from Whampoa to San Francisco, discovered a large rock on the 28th August, in lat. 31° 12′ north, long. 139° 55′ east, not laid down in any chart. The rock was entirely bare, and, to judge from its appearance, was about 250 or 300 feet in height.—*Shipping Gazette*.

The Court of Directors of the East India Company have lately received from the Governor of Prince of Wales Island, Singapore and Malacca, the following Notification, which is published for general information.

Horsburgh Lighthouse.

Notice is hereby given, that a lighthouse, bearing the above designation, in commemoration of the celebrated Hydrographer, has been erected on Pedra Branca, a rock which lies off the eastern entrance of the Straits of Singapore. The light will be exhibited on the night of the 15th October, 1851, and on every night thereafter from sunset to sunrise.

The following is a specification of the position of the lighthouse, the dangers which come within the influence of its light, and the appearance of the light, by Mr. J. T. Thompson, Government Surveyor:—

The lighthouse is situated, according to the Admiralty Chart, in lat. 1° 20′

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20″ north, and long. 104° 25′ east of Greenwich, and by compass bears from Barbucet Point east, distant twelve and a half nautical miles, and from the north-east point of Bingtang N.W.b.W. ¾ W., distant twelve miles.

The following rocks and shoals lying in the way of vessels, and coming within the influence of the light bear from the lighthouse :—

Compass Bearings.	Distance in Nautical miles.	Description.
E.b.S.	⅜	Rock, which shows at low-water spring tides.
S.E.b.E. ¾ E.	½	Rock, with ½ a fathom on it at ditto.
S.E.b.E. ¾ E.	10¼	Postilion Rock, with 1¾ fathoms on it at ditto.
S.S.E. ¼ E.	¾	S.E. Rocks, which always show.
S.b.E. ½ E.	6	Diana Shoal, with 2¾ fathoms on them at low-water spring tides.
South	⅝	S. Rocks, which always show.
S.b.W. ¾ W.	2	South Ledge dries at half ebb.
S.b.W. ¾ W.	7½	Shoal, with 1¼ fathoms on it at low-water spring tides.
S.W. ½ S.	11¾	Crocodile Shoal, with 3 fathoms on it at ditto.
W. ¼ N.	7¾	Rock, with 2¾ fathoms on it at ditto
W.N.W. ¾ W.	6	Stork Rock, dries at low-water spring tides.
W.N.W. ¼ W.	5½	Congalton's Carr, with 1½ fathoms on it at ditto.
Between W.N.W. ¾ W. and N.b.W. ½ W.	Between 4½ and 6	Romania Shoal, with 3½ fathoms on it at ditto.
N.b.E.	10¾	North Patch, with 4 fathoms on it at ditto.

The light will be known to Mariners as a revolving bright light which gradually attains its brightest period once every minute, and as gradually declines until it totally disappears to the distant observer ; whilst, when viewed from a short distance, it is never entirely invisible.

The lantern, which is open all round, elevated 95 feet above the level of the sea at high-water spring tides, will be seen from the deck of a vessel at a distance of fifteen nautical miles.

As a beacon during the day, the lighthouse will be known by the following description :—It stands on a rock, which measures 150 feet long and 100 broad, and is 24 feet high at its highest point above the level of high water spring tides. The lighthouse is a pillar of dressed granite, and the lantern covered by a spherical dome, which is painted white.

(Signed) W. J. Butterworth,

Governor of Prince of Wales Island, Singapore, and Malacca.

Singapore, Sept. 24th, 1851.

Published by order of the Court of Directors of the East India Company,

James C. Melvill, *Secretary.*

East India-House, London, Dec. 3rd, 1851.

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Youghal Harbour Lighthouse, South Coast of Ireland.

Ballast Office, Dublin, Nov. 27th, 1851.

The Corporation for Preserving and Improving the Port of Dublin hereby give notice, that a lighthouse has been erected on the western side of the entrance of Youghal Harbour, County Cork, from which a light will be exhibited on the night of the 1st of February, 1852, and will thereafter be lighted every night from sunset to sunrise.

Specification given of the position and appearance of the light by Mr. Halpin, Inspector of Lighthouses :—

Youghal Harbour Lighthouse is erected on the west side, and within the entrance of the harbour, in lat. 51° 56′ 34″ north, and long. 7° 50′ 33″ west, and bears:—

From Black Rocks (East Point)	N.E. ¾ E.,	distant	2⅜ nautical miles.
„ Capel (or Cable Island east point)	N.E.b.N.	„	3⅝ „
„ Bar Rocks, (S.W. point)	N.b.E. ½ E.	„	1½ „
„ Black Ball Ledge, (N.E. point)	N.b.W. ¾ W.	„	1⅛ „
„ Black Ball Head,	N.W. ¼ W.	„	0⅞ „
„ Ferry Point	S.W. ¾ S.	„	0¼ „

The lantern is 78 feet over high-water level. The light will be a fixed bright light open to the harbour, and seaward to S.W.b.S., and in clear weather will be seen at the distance of two leagues.

The tower is circular, of a light stone colour.

The bearings stated are magnetic—Var. 27° 50′ west.

Note.—Capel Island, on the west side of Youghal Bay, bears from Ballycottin Island Flashing Light E. ½ N., distant six miles, and from Mine Head Intermitting Light W. ½ S., distant twelve miles.

By Order, H. Verreker, *Sec.*

Alteration of Tidal Signals at Dover Harbour.

Dover, September 11th, 1851.

Notice is hereby given, that on and after the first day of January, 1852, the following Tide Signals will be exhibited at Dover Harbour instead of those now in use :—

Depth of Water on Ebb and Flow by Index at North Pier.	Day Signals.	Night Signals.
7 to 10 feet.	Red Flag with a Black Ball under at the customary Staff on the South Pier.	A Small Low Red Light on the North Pier, and similar light on the outer extremity of the South Pier.
10 to 13 feet.	Red Flag on the same Staff.	The lights now in use—viz., two large Red Lights on the Signal Staffs of the South Pier, and the above mentioned Small Low Red Light on the North Pier.
13 feet & upwards.	Red Flag with a Black Ball over on the like Staff.	Lights as above.

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A brilliant Green light projecting its rays towards the Harbour's Mouth will be exhibited throughout the night by the Clock Tower in the inner part of the Harbour, and will show midway between the Piers.

No Signals to ships in general will be made between seven feet at ebb, and seven feet at flood, by the Index Board, and whenever, at other times, the Harbour is inaccessible to vessels, the flag (if in the day) will be pulled down, and (if at night) the light or lights on the South Pier will be extinguished, and only upon the former being rehoisted, or the latter relighted, can the Harbour be entered.

By order of the Honourable Warden and Assistants of Dover Harbour.

G. T. THOMPSON, *Registrar.*

Singapore, Oct. 6th, 1851.

The American clipper-ship *Memnon*, Gordon, has been lost in Gaspar Straits. She was from Hong Kong for London, with a cargo of teas, had a dead beat down the China Sea, and on the morning of the 14th ult., about 3 A.M., was in the Straits of Gaspar, with a bright moonlight, the island off the west end of Pulo Leat bearing south, and the north extreme point of Pulo Leat E.S.E.; tacked and stood to the S.W., but immediately on the ship getting headway she struck on a reef not laid down in the charts. She was hove off the same day at high-water by her third bower, and was found to be uninjured. After being warped out clear of all danger, the vessel was anchored with the second and third bowers, with 30 fathoms of chain each.

Singapore, Oct. 6th, 1851.

The *Adelaide*, Allen, arrived at Whampoa, from Penang, was attacked by Chinese pirates on the voyage, who were beaten off after several of them were killed.

MARINE DEPARTMENT.

Bombay Castle, 31st July, 1851.

The following letter from Lieut. C. G. Constable, late in command of the Schooner *Constance*, dated the 14th instant, to the address of the Commander-in-Chief of the Indian Navy, is published for general information.

From Lieut. Charles G. Constable, I. N.,

To Commodore Stephen Lushington, R. N.,

Commander-in-Chief Indian Navy.

SIR,—I have the honour to report the existence of a dangerous Rock, hitherto unknown to Europeans, near Cape Moosendom, at the entrance to the Persian Gulf.

When in command of the H. C. Schooner *Constance* last May, duty took me to Coomza, a town situated at the bottom of one of the many deep coves in the neighbourhood of Ras Moosendom. I there learnt that a sunken rock lay about half a mile off the island of Towkhul, but I could not then gain any particulars. A week afterwards I called again at Coomza, and was visited by about thirty of the inhabitants, and found amongst them one who gave me marks for finding the shoal. Thus guided, I came over the rocks in my boat, but was swept away by the current, and could not get on the patch again that day. On the following day, I succeeded in anchoring a boat on it, and accurately fixing it. The water, about is very deep (from 50 to 70 fathoms). We first got 14 fathoms on the shoal, then 8, 4, 2, and ½ 1, yards The whole patch is not more than 50 in diameter; and it doe

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not show, except when very close. It bears west (true) from the centre of Towkhul, distant from the nearest part of it seven-tenths of a mile (or nearly three-fourths of a mile.) And here I should remark that Towkhul is placed on the General Chart of the Persian Gulf (where it is spelt Towkiu,) nearly 1′30″ N. of its true position.

The water round about the islands and cliffs that form what, in a general sense, is called Cape Moosendom, is very deep, there being from 40 to 80 fathoms close to them; it is on this account that this shoal would have been particularly dangerous, for in such deep water no such danger would have been apprehended, and that part was trigonometrically surveyed by Lieut. J. M. Guy, in 1821. The warning supplied by the lead, would in all probability have come too late, supposing a lead had been going in such deep water.

Towkhul is a perpendicular rocky islet, about 300 feet high, nowhere more than a quarter of a mile long; there is 50 fathoms water almost alongside of it. The natives of Coomza call it "Sowhgg," and the shoal "Ruk Sowhgg."

The following marks were observed when anchored on the rocky patch :—

Miskhan Rocks on with south end of Perforated Rock.

Kuchul is hidden behind the Southern part of Towkhul.

Eastern end of Jezeereh Goon on with the easternmost little bit of white beach in Dooah Mielee.

Western extreme of Jezeereh Goon in one with the high round hill over behind Kumza.

I take this opportuning of adding my testimony to the non-existence of the Challenger Bank, at least in the position assigned to it. In H. M. S. *Challenger* the longitudes were reckoned from Bombay Flag Staff in 72° 46′ 30″ E., as used by Captain Owen. Making, therefore, the necessary allowance, I steered the *Constance* over the given site of the shoal, and no indication of shoal water was seen in any quarter.

I am &c.,

C. G. Constable, *Lieutenant I. N.*
Late Commander H. C. Schooner Constance.

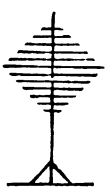
Bombay, 14*th July*, 1851.

By Order of the Right Honourable the Governor in Council,
J. G. Lumsden, *Secretary to Government.*

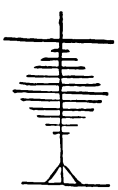
Beacons and Buoys in the St. Lawrence.

Beacons on Island Anticosti, South Shore.

South Point Beacon, forty feet high, lat. 49° 3′ 43″, long. 62° 18′ 30″.



Six miles east of Salt Lake Bay, lat. 49°17′ 30″ long. 43° 20′ 30″.



Pavillion River Beacon forty feet high, lat. 49° 9′ 45″, long. 62° 53′ 10″.

Cape St. Mary, lat. 49° 40′ 30″ N., long. 63° 58′ 0″ W.

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May 17*th*, 1851.

A black buoy on the north extremity of the Prairie Shoal in four fathoms; St. Peters Church open its own breadth of the east side of St. Paul's Bay, Notre Dame Church in one with the south part of Point St. Joseph.

A black buoy on the east end of the Brule Bank, in four fathoms, the west end of Two Head Island, and the west end of Burnt Cape Ledge in one, Cape Tourmente W.S.W.

A black buoy on the north-west side of the Brule Bank, in three fathoms water, the west end of Two Head Island and the east end of Margaret Island, touching the west end of Grosse Island, S.b.E. ½ E.

A red buoy on the east end of the Traverse Spit in three fathoms, the west end of the Two Head Island, and the east end of Margaret Island just open, the west end of Grosse Island S.S.E.

A chequered white and black buoy on the east end of the west sand in three fathoms, Patience Island and Two Head Island touching Berthier Church just open to the westward of Reaux Island.

Rio de la Hacha.—*Bremen, Nov.* 30, 1851.—Captain C. Osterloh, commanding the Bremen brig *Margaret*, arrived at this port from St. Thomas, reports as follows, in order to meet incorrect statements:—Rio de La Hacha (or La Hacha, as it is called commonly), belonging to the Republic of New Granada, has no harbour or bay, but is situated on the open coast, in lat. 11° 33′ N., long. 72° 52′ 30″ W. of Greenwich. This was ascertained by a chronometer that had been examined four days before arrival in La Hacha, at St. Thomas, and in La Hacha itself, and by means of which it was determined that St. Thomas (Fort Christian) was situated four hours nineteen minutes forty seconds west of Greenwich. Vessels destined for this place, and coming from the eastward, do best if they run for Cape La Vela, about thirteen German miles east of La Hacha. The country at the Cape is tolerably high, hilly, and towards the interior, mountainous and uncultivated. It is to be known particularly, by a small rocky island close to the Cape. From this cape take your course; but do not come closer to the land than eighteen fathoms, because there are banks between La Vela and La Hacha, which extend certainly much further from the shore than noted in the direction books. Vessels bound for Santa Martha have been lost on these banks, although it is to be supposed that they have kept from the land at least one and a half miles English.

The coast to the westward of La Vela is very low and dangerous, on account of the malevolent Indians, who inhabited the whole extent as far as close to La Hacha. When you have made good the distance until to about the meridian of La Hacha, steer towards the land, and you will perceive some woodland east of the town, which appears much higher and darker than the other parts of the country. This woodland borders immediately on the eastern part of the town of La Hacha, from which it is separated only by a small river (where the territory of the Indians commences), and is the only mark on this coast, as the town, on account of its low situation, is not to be seen so soon. When you are as close to the shore as to see the town—which you can know by a high church with a square obtuse steeple in the middle—make use of the lead continually, and do not fear because the water begins to become shallow, until you find a depth suitable for your vessel; where you will find the best anchorage ground, N.N.W. of the church, on a sandy bottom. Pilots are not to be had here. If you do not make use of the lead, but think yourself sufficiently distant from the shore, you will run the risk of getting aground, because about two English miles from the shore, there are only eighteen feet of water.

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Should you have to pass Rio Hacha, you will have a good mark at the Snow Mountains east of Santa Martha, which raise their summits above the clouds It will, however, be very difficult to beat up, as there is commonly a strong breeze in day time. During my sojourn from the 1st to the 23rd of April, we had a very strong sea-breeze from N.E. to N., which mostly commenced at nine o'clock in the morning, and lasted until eight o'clock in the evening, being particularly severe from two until four o'clock in the afternoon. At night there is mostly a calm and very little land breeze.

The principal articles of export are redwood, and fustic, particularly the former article, which is brought to market by the Indians in large quantities.

The authorities of La Hacha were very kind and friendly towards us, and after perusal of my passport gave a salute to the flag of our Republic, which now for the first time was seen in these waters.

C. Osterloh, *Bremen brig Margaret.*

Rules and Directions for the Regulations of the Ports of Hobart Town and Launceston.

1. No vessel shall receive a Certificate of exemption from pilotage until she has been two months in the Colonial trade without interruption.

2. When the Master or Commander of a vessel wishes to be removed either from her moorings or from her berth alongside the wharf, he must write an application in a book in the Port Office; and the Officer whose duty it may be to superintend the removal, must when he has performed this duty, make an entry in the book opposite to the application, stating the date when such removal took place, and signing his name to the entry.

3. When a vessel is about to leave the port, the Master or Commander must write his requisition for a Pilot in a book in the Port Office, stating the hour the Pilot will be required.

4. The Master or Commander of every Vessel leaving the port must call at the Port Office and discharge all pilotage and harbour dues; and upon producing the receipt for the same to the Collector of Customs, and discharging all other duties to the Customs, the Vessel's clearance will be forwarded to the Port Officer.

5. The following are to be considered removes upon which the harbour-due of One Penny per ton will be charged:—

1st.—The anchoring and mooring a Vessel on arrival, whether inside or outside the Harbour Master's limits, (which is a line drawn from Battery Point to Macquarie Point), except those Vessels attempt by the Act of Council 10th Victoria, No. 1.

2nd.—Any removal in the Port, unmooring and moving to the wharf, to be considered as one remove: hauling off the wharf and re-mooring to be considered as only one remove: or if a Vessel be taken alongside the wharf at once on arriving from sea, that is to be considered as only one remove. Unmooring and preparing for sea to be one remove, except when the Vessel is outside the Harbour Master's limits, and then only on a written requisition.

6. All vessels entering the River Tamar for the purpose of seeking for trade, and proceeding no further up than George Town, and not breaking bulk, are to be exempt from pilotage except upon requiring the services of a pilot.

7. All Colonial traders taking the *Gypsy* steam-tug from Launceston to Bryant's Bay, or the converse, are to pay only two thirds pilotage.

8. The limits of the Port of Hobart Town, for the purposes of the Port Regulations, to be a line drawn from Little Sandy Bay Point to Tryway Point.

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9. All Vessels after having anchored in the Port are (without being required to do so) to rig in their flying jib-booms; and are not to run them out again before their departure from the Port without the permission of the Port Officer.

10. The Harbour Master, his Assistants, or any Pilot, while removing any Vessel from one anchorage to another, may make her fast to any other Vessel.

11. The Senior Harbour Master is the second Officer of the Port, and will take charge of the Port Officer's duties in his absence: both Harbour Masters to be available for any general duty which the Port Officer may require of them.

12. The Port Officer at Hobart Town has charge of the whole Marine Department of the Colony, and is responsible to the Government that the whole of the duties are performed. His charge includes the Port Officer at Launceston, the Harbour Masters, Pilots, Signal Stations, Lighthouses, Buoys and Beacons, and all persons connected with them on both sides of the Island.

13. The Pilots in charge of Vessels entering the Port are not to permit any boats to come alongside except the Boarding Officer's boat, the Customs' boat, or Health Officer, before the Vessel is properly secured at her anchorage.

Given, &c.

W. T. Denison.

Dangers in the Sooloo and Mindoro Seas.

Newton Heath, Manchester, November 20th, 1851.

Sir.—First premising that I have been in command of merchant vessels navigating in the eastern seas for several years, I beg to acquaint you of the following dangers, &c. that I have met with on various trading voyages whilst there, which I believe are not generally known; if they should not have been noticed by any of your correspondents, please give them a place in your *Magazine* for the benefit of its readers.

First.—The Golconda shoal in the Mindoro Sea.—"Sir E. Belcher speaking of this shoal in his voyages of the *Samarang* says, that he could not determine the exact position of it, not having any land in sight, and very strong currents prevailing at the time." I happened in one of my voyages to pass over it (or possibly another) in very clear weather, with the land of Panay and the island of Cagayane both in sight, of which I annex the particulars.

October 17th, 1850, noon, lat. 9° 55′ N., island Cagayane, S.W.b.S. distance twenty miles, moderate breezes, north-east. At 1h. 30m. close to the shoal, could not weather it, tacked off and sent the boat to sound; found three fathoms, but there being a strong westerly current, the boat could not reach the extreme eastern point of the shoal where there appeared to be much less water; after hoisting up the boat stood over the western part of the shoal, least water in passing over six fathoms; bottom, black rocks with white sandy patches; whilst on the shoal, the island Cagayane bore S.S.W. ¼ S., from the Royal yard and point Nasog, on the island of Panay, N.E. ¾ E. from the deck, which will make the shoal in lat. 10°02′ N., long. 121° 27′ E., allowing Cagayane the position given it by Sir E. Belcher.

The extent of the shoal is about two cables' length, in a north-east and south-west direction, and half a ditto in breadth; saw another shoal about the same size, bearing S.b.W. from this distant two miles: after passing the shoal stood to the north-west twenty miles with a good look out, but saw nothing more. These shoals appear to extend in patches from Cagayane to the parallel of 10° 02′ N.; as on a subsequent voyage, I passsd through the

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Cagayane islands, bound to Manila with a strong north-east wind; after passing through, wind shifted to the northward; endeavoured to pass between that parallel and the islands, but on nearing the meridian of Cagayane, its distance about fifteen miles, found the passage nearly blocked up with heavy breakers. It would not be advisable for any vessel to get on that meridian, until to the northward of 10° 10′ N., and *vice versa*.

Shoal in Carimata Passage.

June, 1846.—Bound to Singapore, passed a sand bank, nearly awash, bearing from East island, S.E.b.S.½S., distant twelve miles: this was published on my arrival at Singapore in the local papers.

Straits of Balabac.

The Dry Sand Bank mentioned by Horsburgh, three miles north of Passage island, has an extensive reef stretching to the south-east, which is not visible in the south-west monsoon, but breaks very heavy in the north-east ditto, and would be very dangerous if a vessel with a scant wind should be tempted to go to the southward of the shoal. There are also several very dangerous shoal patches contiguous to the islets, off the east coast of Banguey: they should not be approached at all in the night, nor within five or six miles in the day without a good look out at the mast head.

Calagatan Shoal.

This shoal does not appear to be noticed by navigators at all (at least, not to my knowledge), although much in the way of vessels going to, or leaving Manila by the Straits of St. Bernadino; it extends some distance along the coast, from Port St. Jago to the northward; about two miles off shore breaks very heavy in the south-west monsoon, to avoid it, after passing Point St. Jago (which is bold to), do not steer more northerly than N.W.b.N., until Fortune Island is brought to bear N.b.W.; then haul up for that island and pass it on either side; another mark for clearing this shoal, is to keep Point Limbones open of the eastern extreme of the land of Maribales.

Shoals contiguous to Sooloo.

Breakers probably on Takoot Paboonoowan shoal.—I have seen these breakers on three different occasions, and suppose they must be on the above shoal, although they are farther north than the position as given by Horsburgh; neither does he speak of breakers. I made them to bear from Duo Bolod N.W.b.W., and from Sangboys S.b.W.¼W.; it appears to be of small extent, and probably would not break in smooth water.

Another shoal of three fathoms, or probably less at low water spring tides exists, with the Salleeolakit islands in one, bearing S.E.b.E., and the Sangboys E.b.N.¼N. This is probably the Griffin shoal of Horsburgh, but it is much to the westward of the position given by him.

There are several shoal patches to the westward on this parallel, but, I think none dangerous but the above. I have passed over all that I believe exist, but never had less than five fathoms. I have gone this passage on many different occasions, to and from Sooloo, and I find the best track is to keep the island of Dassaan just visible from the deck (of a small vessel nearly dipping), which will lead clear through between these shoals; it would not be advisable for a stranger to get on this parallel at night, as most of the shoals are on the edge of soundings, and vessels coming from the northward would get no bottom until on them.

I also beg to acquaint you with two different passages between the Phillippine islands that I have gone through several times, and which might probably be of use to future navigators.

Northumberland Passage.

Running for the above passage, passed over a shoal with overfalls from five to twelve fathoms, about half a mile in extent; at the time had the

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North Rocks in one with Turret island, bearing S.E.½E. and the north-west extreme of Busvagon, south.

The first is through the straits of Iloilo, and along the east coast of Panay, which is slightly spoken of by Horsburgh. The town of Iloilo is the seat of Government for the island of Panay; it has its Governor, Lieutenant ditto, and their officials,—it carries on an extensive trade with Manila—in tobacco, sugar, sapan wood, &c.; and is a good place for a vessel to put in, if in distress. It is situated on the extreme south-east part of Panay, on very low land; having a salt water creak running round the town, in which vessels of 200 tons can load or discharge, and if necessary, can be hove down and repaired. There are no port charges, only a small fee to the Capitaine del Porto for entering and clearing the vessel; water is conveniently got on the island of Guimaras. Iloilo itself being badly supplied; refreshments can be got pretty moderate. High water full and change twelve hours. There is a dangerous shoal to the westward of Iloilo of considerable extent, say, eight or ten miles in a south-west direction; to avoid this a course should be steered for the south end of Guimaras, and not haul to the northward until within half a mile of that island; when at that distance, haul up and coast along as near as safety will permit, (it is bold to), keeping the lead going, soundings will be obtained from thirty to forty fathoms when off the Bay of St. Ana, which will decrease quickly to twelve in the Channel (if to the westward of it, you will shoal to five on the tail of the bank). This you will carry until up to the first of three remarkable bluff headlands on the Guimaras shore, when abreast the second bluff, it will decrease to five, and on nearing the third ditto, which is nearly opposite the town, there is no bottom at thirty fathoms. Going in with a working breeze, should never stand off to less than four and a half fathoms, but can approach the Guimaras shore within hailing distance. When about entering the narrowest part of the Channel, the town of Iloilo will be seen rising above the horizon, with the Fort nearly in one with the third bluff; this bluff must be passed as close as possible to avoid being horsed on to the opposite shore by the strong tides. After rounding the Fort the creek's mouth will be seen: a little to eastward of this, is the best anchorage in twelve fathoms, mud close to the fishing stakes, with a kedge inshore.

If bound to Manila by this passage, a pilot can be procured here for that place, or merely through the straits of Iloilo, which extends until clear of the shoals outside the seven pecadoes; for the last they will charge from eight to ten dollars. Leaving Iloilo with a fair wind, mid-channel is a good course, but if foul, borrow on the Guimaras shore until in the neighbourhood of the seven pecadoes; these *must be passed* on the north side (the south being full of shoals), and then borrow on the fishing stakes on the Panay shore; you will carry from fourteen to seven fathoms on this line, until one and a half mile from the islands, when it will shoal suddenly to five or four. When getting near this narrow part of the Channel, the seven pecadoes will take the appearance of three islands, and kept on with a remarkable peak and valley; on the high land of Panay will lead clear, when the island of Nampaloongan (which is a high island between Negro and Guimaras is open, of the east end of the latter island,

steer north-east until in seven or eight fathoms, then shape a course to pass mid-way between Negros and Panay, soundings from twenty fathoms down will be obtained all the way, but should not be decreased less than five on either shore; when the north end of Negros bears east, give it a wide berth to avoid an extensive mud bank that exists there; pass the Calabezas islands at convenient distance—then steer to pass between Apiton and Panay—then through between Sombrero and Balubadiandan—then a course may be steered either side of Culebras for the Channel between Calagnan and Canas, and thence to the northward. All these Channels, although narrow, are safe

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with good anchoring ground, (see copy of chart). (In October, 1849, I rode out a typhoon between Calagnan and Canas). After getting clear to the northward, steer W.N.W. for the Sapatas, and pass either between them or to the southward as most convenient (it would not be advisable to go to the northward, as there are extensive shoals off the south coast of Masbate); then shape a course to pass between Tablas and Romblon; there are no dangers on this track. The small but high and jagged looking island of Cresto de Gallo alone will be seen to the northward, on nearing Sibuyan. After passing between Tablas and Romblon, the passage through any of the other islands may be taken at pleasure, they being all safe and pretty correct on Horsburgh's charts.

The second passage along the west coast of Panay is much used by Spanish vessels in the north-east monsoon, when coming from the southward. It is close along the west coast of Panay, passing between it and the Dry Sand Bank, then between Maralison and an island close to Panay, and coasting along to Point Potol, passing between that Point and the Caraboas islands, and then along the island of Tablas for Maestro de Campo (which with all the adjacent islands are bold to), and thence to Manila, if with a northerly wind, work close along the Tablas shore, there are no dangers.

In the late charts, the space between Point Potol and the Dry Sand Bank, is made to appear full of shoals. I have gone over this ground several times with a beating wind, but never saw any; and I believe, the only hidden danger that was not known thoroughly, was the Panagatan shoal, on which the *Marquis of Camden* and other vessels have been lost, but which is now correctly placed by Sir E. Belcher.

I remain, &c.,

To the Editor of the N.M. E. B. WOLFE.

BAR OF RIO GRANDE DEL SUD.

The depth of water the *Irene* had on the bar of Rio Grande del Sud whilst entering that port on the 2nd of September, was fifteen feet, and sailing from thence on the 12th of October, the least depth of water on the bar was seventeen feet. Captain Downward has furnished the following for the information of mariners.

The new lighthouse was in a forward state of erection, the foundation being completed and the basement piece secured in its place. The new lighthouse bears from the old one, north 23° west, (magnetic), 270 feet, and will be 69 feet high. It will be lighted on and after the 1st of January next, from which time a revolving light of the first order will be shown from the new tower. Whilst coming over the bar the new lighthouse was "on" with the centre of the block-house that is attached to the fort, or the most easterly building; and is a good mark to run in for the bar, so long as it remains in its present position. One lighthouse cannot well be mistaken for the other in daytime, as the new one will be thirty-three feet higher than the other. The winds are generally rotatory ones—travelling to the south-east; and should ship-masters be running towards the port, with the wind to the north-east., and veered to the N.N.E or N., by the time they have made the bar, they should not attempt to beat their ships to windward, but take a position to the southward of the bar, as the wind will, in all probability, quickly veer to the the north-west and south-west when they will have the weather gage and can enter with plenty of water.

The following vessels left Rio Grande, 27th September:—The *Caroline* (struck on the bar going out), and *Regulator* (also struck on the bar, being heavily laden), both for Birkenhead; *Zebra*, for Cork or Falmouth; and *Eliza Frances*, (wrecked on the bar; crew saved), for orders.

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THE BEHRING STRAITS SEARCHING EXPEDITIONS.—Our advices from California mention the arrival of H.M.S *Dædalus*, Capt. G. G. Wellesley, at San Francisco, on the 22nd October, from Port Clarence, Behring Straits, which she left on the 1st of the month. She brought as passengers, Lieut. Cooper and Dr. Simpson, of H.M.S. *Plover*, which vessel had returned to Port Clarence, from the summer expedition, having been unable to penetrate further north than 71°; being 3° short of their excursion last year. The *Plover's* consort had not returned to her winter quarters at the sailing of the *Dædalus*. No vestige of the expedition of Sir John Franklin was discovered; and it was the opinion of the two officers from the *Plover* who came passengers in the *Dædalus* that all further attempts to find traces leading to the Discovery of the Arctic voyagers will prove utterly fruitless. The following is the report of the *Dædalus*:—"Her Britannic Majesty's ship *Dædalus*, Capt. G. G. Wellesley, from Port Clarence, Behring Straits, October 1, arrived in our harbour yesterday, and anchored at Sancilito. The *Dædalus* was despatched from Valparaiso last spring to visit the provision which was kept at Port Clarence as a depot and point of succour in case either Sir John Franklin's expedition or the other vessels in search of him should be obliged to quit their ships and take to their boats. The *Dædalus* arrived at the edge of the ice (which was then close to St. Lawrence Island) in the middle of June, when she fell in with a large fleet of whalers, principally Americans, waiting for an opening to proceed northward. There had been but little done in taking whales this season, although large numbers of them had been seen in the Arctic seas in the early part of the season. Most of the ships had gone south. Captain Wellesley thinks that all the vessels had passed the Straits for the south before the *Dædalus* sailed. The summer season is later than usual, the first fall of snow having occurred on the 1st of October, the day the *Dædalus* sailed from Port Clarence." Captain Wellesley reports large quantities of ice in the Straits, which were, in fact, almost blocked up. The *Dædalus* had several narrow escapes, and was at one time in imminent danger of foundering.

Singapore, November 5th.—On the 28th of September the barque *Fawn*, Alfred Rogers, Commander, belonging to Calcutta, sailed from Singapore on her return voyage from China to Calcutta. She had been repairing there for three weeks during which time her crew of Bengalee Lascars refused to work and to proceed in her, although four months' pay was due to them. A new crew of Javanese and Malays was supplied by a shipping master, who warned Capt. Rogers against ill-using them, as the Malay character is revengeful and so widely different from that of the Bengalese. It appears that the vessel held on her course for six days without any untoward occurrence, but on the sixth day the chief mate found the burra-tindal smoking down the fore-hatch, whereupon he not only kicked and abused him, but brought him on deck and there inflicted corporal punishment in presence of the whole crew. About midnight the Malays and Javanese mutinied, and murdered the captain, who was sleeping on deck; about daylight the second mate was killed, being almost cut to pieces. The first mate and Mr. Elphick, a passenger, defended themselves in one of the cabins for nearly twenty-four hours after the captain's death, when the former jumped out of the port and was drowned. Elphick died fighting with a handspike against his assailants. There were two ladies on board—Mrs. Rogers, the captain's wife, and Mrs. Becham, her sister, the widow of a military officer, and her child. I have not learned with any degree of certainty how they were treated by the mutineers; but it would appear that the wretches did not intend to kill them, for they lowered them in a boat, which swamped, and the three were accidentally drowned. When the vessel was cleared of all the Europeans they scuttled and fired her, although she had a large quantity of copper on board, a portion of which might have easily been removed. The ship finally grounded at Bruas, about fifty miles south of Penang. Part of the crew went on shore and the remainder came to Singapore in one of the boats, arriving on the 10th. Two Bengalese who were of the party gave information at once to the resident councillor, and the police were set on the scent. Two Cochin Chinese and three Javanese have been taken, and the Chinese carpenter sur-

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rendered. The steamer *Hoogly* was dispatched on the 13th to look out for the wreck and the rest of the mutineers—part of whom had gone to Penang and given themselves up, and the barra-tindal with the rest were captured at Bruas; this arch mover in the plot was wearing the captain's gold watch and chain when seized.

Liberia.

We are truly glad that our Liberia friends (for all good men must wish well to the New African republic) can give so direct a denial to the cruel charge of Com. Forbes' statement as to Slavery in Liberia. It may possibly be alleged by the hypercritical that the following letter from President Roberts, is ex parte: this objection is happily met by the official report of J. K. Straw, Esq., manager of the British cotton farms in Liberia, who after visiting all parts of that territory, asserts that they have entirely extinguished the slave-trade along their entire line of coast. The letter of Mr. Roberts we subjoin.

Government House, Monrovia, July 24th, 1851.

Sir.—I received a few days ago, the May number of *The Anti-Slavery Reporter*, containing an extract from Com. Forbes' book entitled "Dahomy and the Dahomans," in which the stranger commander roundly accuses the Liberians of engaging in "the buying and selling of God's image." &c., &c. These foul aspersions—as indeed they are—have been contradicted through the columns of the *Liberia Herald*. But I am particularly gratified to find that we were not without friends in England, who would not allow such statements, seriously derogatory to the very best interests of our little community, to be circulated, without inquiry as to their correctness, and adding a word in defence of an injured people, so cruelly attacked.

I beg, sir, that you, and our good friend Mr. Cresson, who has never yet failed Liberia in her times of need, will accept my best thanks for the article you published, exposing the erroneousness of Com Forbes' assertions in regard to the toleration of slavery by the Liberians.

Since reading Com. Forbes' letter to you, March 26th, published in the *Anti-Slavery Reporter*, I have endeavoured to ascertain what 'two" citizens of Liberia he refers to,—"sojourners at Cape Mount, who owned slaves." But no one can give me the information; nor can I imagine who they can possibly be, unless one is a man by name "Curtis," who some seventeen years ago, for reasons unnecessary to name, left the colony, and settled among the natives of Cape Mount, where he united himself to the daughter of a chief of the country, and has not since considered himself (residing as he was beyond the jurisdiction of the commonwealth) as identified with the Liberians: indeed, in his feelings he was wholly alienated from the people of Liberia. This, I am satisfied, was known to Com. Forbes, when he was penning his paragraph on Liberia, and to every British officer who has visited Cape Mount. Who is the other person alluded to (if Curtis be one) I cannot possibly divine. But I would ask, my dear Sir, is it not ungenerous, unkind, and unjust in Com. Forbes, even admitting it were true that he saw two Liberian citizens at Cape Mount, at that time beyond the jurisdiction of Liberia, engaged, as he states, in the slave-trade, to denounce a whole community? No, Sir; I thank God, the Liberians, as a people, certainly, abhor slavery in all its phases, and would no sooner engage in the nefarious traffic than Com. Forbes himself. And Liberia will outlive Com. Forbes, and stand a lasting monument of the erroneousness of his book, at least so far as the people of Liberia are concerned.

I have nothing new to communicate respecting the progress of affairs here. We have had a great deal of rain this season, which makes things at present look rather dull. Still the prospect of a fine harvest, and brisk trade when the season shall open, is very encouraging.

I am, &c.,

J. J. Roberts.

Thomas Hodgkin, M.D., London.

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CRESSON HARBOUR, *Liberia.*—In our October number, we adverted to the superior advantages of Cresson, Liberia, as a place of supplies, and a good place of call for our new line of African steamers on that coast. We have since heard the opinion of Capt. Murston, U.S. navy, who is intimately acquainted with the entire coast. He says, "It must become the chief port of entry to the new republic, to whatever length on the entire coast she may in time extend; as it is the only harbour along that entire distance that deserves the name."

REWARD FOR MERITORIOUS SERVICES.—The committee for managing the affairs of Lloyd's, have resolved that a complimentary letter be written to Captain Hein, of the Russian ship *John*, of Odessa—voting the honorary bronze medal of Lloyd's to Thomas Larkins, mate of ditto, and the sum of ten pounds out of the fund of the establishment, to be equally divided amongst the remaining five men who accompanied the boat's crew, to mark the sense entertained by the committee of their brave and humane exertions on the occasion when the *Owen Glendower* yacht, of Mr. Moore, of Moore-Hall Hill, county of Waterford, was dismasted in a heavy gale of wind, off the Arran Island, on the 25th of September last. The committee have also voted the sum of five pounds to John Richardson, John Richardson, junr., Robert Watson, Thomas Knaggs, and John Daly, five men labourers in the employ of Mr. Maberly, of the Alum Works, at Sansend, neer Whitby, who, at the peril of their lives, were instrumental in saving W. Breadlam, of the *Friends' Goodwill*, capsized in a heavy gale of wind, near Whitby, on the 26th of September last.

PIRATICAL CONDUCT OF VESSELS IN THE MEDITERRANEAN.

SIR.—Captain Embleton, of the British barque *Juliana*, arrived yesterday as reported, being in quarantine, has written to us the following note.

I am, &c.,

Barcelona, Dec. 3. FRATINI AND GARCIA.

"*Barcelona, Dec*, 2, 1851.

"Gentlemen,—Having been very much annoyed by a small vessel which came from among the islands of Columbretas, and which could have had no other intention than to rob us, I would desire you to report to the editor of the *Shipping and Mercantile Gazette*, that the *Juliana* was all but boarded by the above vessel, under the pretence of wanting water; and had we not seen such a number of men, and other unmistakeable signs of piratical intentions, we should have been boarded and robbed: fortunately we saw it in time, and having our swivels standing prominently, we got clear of him. One of our crew told me that, twelve months ago, a vessel that he was then in was boarded, and they were obliged to give them rope, provisions, clothes, coals; and in fact everything they desired, which is very grievous. Could the same message not be sent to the government of Spain as was sent to Moroceo?

"I am, &c.,

"E. W. EMBLETON.

"P.S. Vessels ought to be cautious whom they allow to come alongside.

"*To Messrs. Fratini and Garcia.*"

FIVE HUNDRED PERSONS DESTROYED BY A WATERSPOUT.—On Saturday further intelligence was received at Lloyd's under date Malta, Monday, the 8th instant, of a most awful occurrence at the island off Sicily, which had been swept by two enormous waterspouts, accompanied by a terific hurricane. Those who witnessed the phenomena describe the waterspouts as two immense spherical bodies of water reaching from the clouds, their cones nearly touching the earth; and, as far as could be judged at a quarter of a mile apart, travelling with immense velocity. They passed over the island near Marsala. In their progress

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houses were unroofed, trees uprooted, men and women, horses, cattle, and sheep were raised up, drawn into their vortex, and borne on to destruction; during their passage rain descended in cataracts, accompanied with hailstones of enormous size and masses of ice. Going over Castellamare, near Stabia, it destroyed half the town, and washed 200 of the inhabitants into the sea, who all perished. Upwards of 500 persons have been destroyed by this terrible visitation, and an immense amount of property, the country being laid waste for miles. The shipping in the harbour suffered severely, many vessels being destroyed, and their crews drowned.

STEAM BOAT BUILDING IN THE THAMES.—The British public are frequently amazed by accounts of the immense new steam boats of America, and the construction of others of still greater tonnage and power. We think, however, that a visit to the Thames building-yard of Mare and Co., Orchard Wharf, Blackwall, would convince the English public that neither for tonnage nor horse-power do the American yards surpass us in building ships and machinery. As a specimen of British manufacture, Messrs. Mare launched *two gigantic* ships on Tuesday last. One of these vessels is a *yacht* for the Pacha of Egypt, to be named the *Faid Gihaad*, a ship 282 feet in length, forty feet in breadth, twenty-nine feet in depth, of 2,200 tons measurement, and to have engines by Maudslay, Son and Field. The other ship to be launched on Tuesday is the *Lady Jocelyn*, built for the General Screw Steam Company, a sister ship of the *Queen of the South*, launched a few weeks since, 240 feet long, thirty-nine feet broad, twenty-five feet deep, 1,765 tons measurement, to be propelled by a screw machinery by Maudslay, of 300 horse-power. At this establishment of Mr. Mare may now be seen some thirteen steamers of all sizes, from the stupendous 1,200 horse-power steamer the *Himalaya*, of 3,041 tons, building for the Peninsular and Oriental Steam Company, to a gun-boat of 144 tons and thirty horse power, in course of construction.

NEW CHARTS.

New and Correct Charts, Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry.

	s.	d.
ENGLAND, EAST COAST, YARMOUTH ROADS, corrected to 1851, by *Capt. Bullock, R.N.*	0	6
Ditto do. LOWESTOFT TO ORFORD do do ...	2	0
Ditto do. BRITISH LIGHTS do do ...	1	0
POLAR SEA, ARCTIC CHART DISCOVERIES, by *Capt. Austin, R.N.* and *Mr. Penny*, Lithographed, 1851	1	0
MEDITERRANEAN, ARCHIPELAGO, SKOPELO GROUP, by *Capts Graves and Brock, R.N.*, 1847	1	6
AFRICA, WEST COAST, DELTA OF THE KOWARA, lithographed, from 1833 to 1851	1	0
Ditto do. GABOON RIVER, corrected to 1849	1	6
Ditto do. ST. HELENA BAY TO CAPE OF GOOD HOPE ...	1	6
Ditto SOUTH COAST, sheet 1, TABLE BAY TO CAPE AGULHAS ...	1	6
Ditto do. do. 2, AGULHAS TO CAPE ST. BLAISE ...	1	0
Ditto do. do. 3, CAPE ST. BLAISE TO ZWELLENDAM POINT	1	0
Ditto do. do. 4, ZWELLENDAM POINT TO CAPE RECIF	1	0
Ditto do. do. 5, CAPE RECIF TO KEISKAMMA RIVER...	1	0
Ditto do. do. 6, KEISKAMMA RIVER TO HOLE IN THE WALL	1	0
Ditto do. do 7, HOLE IN THE WALL to lat. 30° 30′S.	1	0
Ditto do. do. 8, Lat. 30° 30′ S. to MORLEY POINT, including PORT NATAL	1	0
Ditto do. do. 9, MORLEY POINT TO SORDWANA POINT	1	0

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		s.	d.
West Indies,	Plans of Ports in the Antilles, by *Capt. Barnett, R.N.*, 1846	1	6
Ditto	Bahamas, Long Island, Clarence Harbour, do. 1824	0	6
Ditto	do. Sheets 3 and 4 Great Bahama Bank, by *Capts. Owen, Barnett and Smith, R.N.*, 1836 to 1848, each ...	2	0
Ditto	do. Egg Island to Eleuthera with plan of Port Royal Harbour, by *Capt. Barnett, R.N.*	1	6
Ditto	Antigua Harbour, Carlisle Bay to St. John's Harbour, by *Capt. Barnett, R.N.*, 1848	2	6
South America,	South-East Coast, Benevente to Itapemirim with Benevete Bay, enlarged, by *Mr. T. W. Sullivan, R.N.*, 1851	0	6
Ditto	West Coast, in San Francisco Harbour, Suisun Bay, from an American Survey, 1850	1	0
East Indies,	Islands East of Java, from Bally to Timor, by *Lieut. H. D. A. Smits, R.D., Navy*, 1848	2	6

Edward Dunsterville, *Master, R.N.*

Hydrographic Office, November 20th, 1851.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory, From the 21st of November, to the 20th of December, 1851.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter		Wind. Strength		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min	Max	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
		In Dec	In Dec	°	°	°	°						
21	F.	29·94	29·83	36	44	29	45	SW	NW	3	3	od 2)	o
22	S.	30 00	30·10	40	42	37	43	N	N	4	4	bcp 2)	bc
23	Su.	30·14	30·06	32	36	30	38	W	S	2	2	bcm	or 4)
24	M.	29·51	29·46	43	42	36	43	NW	N	3	3	om	bc
25	Tu.	29·49	29·47	31	36	29	38	W	W	2	2	b	bcm
26	W.	29·61	29·67	30	35	26	36	N	N	2	2	of	o
27	Th.	29·79	29·84	36	38	32	39	NW	N	2	2	ogf	bcm
28	F.	30·00	30·06	32	38	30	40	W	NW	2	2	bcm	om
29	S.	30·16	30·20	30	34	28	36	W	W	1	1	bm	bm
30	Su.	30·19	30·23	32	36	28	38	N	N	2	2	bc	bcf
1	M.	30·25	30·28	29	35	27	37	W	W	1	1	bfm	o
2	Tu.	30·22	30·20	38	41	34	42	NW	W	2	2	og	og
3	W.	30·28	30·25	38	38	32	40	NW	W	1	1	ogm	og
4	Th.	30·22	30·24	31	36	30	42	NW	W	2	2	bcm	bm
5	F.	30·28	30·28	43	46	35	47	SW	SW	1	1	bc	or 3)
6	S.	30·24	30·24	46	47	44	48	SW	W	2	3	o	o
7	Su.	30·26	30·21	47	48	45	49	SW	SW	2	3	bc	bc
8	M.	29·94	30·09	49	50	42	52	SW	W	3	3	bc	bc
9	Tu.	30 21	30·14	44	52	36	54	SW	SW	2	4	o	o
10	W.	30·07	30·01	52	52	51	53	SW	SW	5	4	qo	bc
11	Th.	30·43	30·51	42	48	40	50	SW	W	2	1	b	bcm
12	F.	30·55	30·51	32	34	31	37	W	NE	1	1	of	of
13	S.	30·43	30·39	40	42	37	43	NE	NE	1	2	of	o
14	Su.	30·53	30·49	40	40	38	42	E	E	1	1	o	of
15	M.	30·43	30·40	37	37	35	38	SE	S	1	1	og	og
16	Tu.	30·39	30·37	38	43	35	44	S	SW	1	1	og	og
17	W.	30·34	30·30	43	45	41	46	SE	SE	1	1	bcm	bm
18	Th.	30·20	30·14	34	38	33	41	SE	S	1	2	og	o
19	F.	30·14	30·14	44	49	41	50	S	S	1	2	bc	bc
20	S.	30·13	30·06	48	52	44	53	S	S	1	2	od (2)	bc

November, 1851.—Mean height of the barometer = 29·884 inches; mean temperature = 36·8 degrees; depth of rain fallen = 0·55 inches.

TO CORRESPONDENCE.

The important communication from Labuan and passages to and from San Francisco just received.

Hunt & Son, Printers, 6, New Church Street, Edgware Road.

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IMPORTANT TO THE MESS TABLE.

BY ROYAL

Letters Patent

EDWARDS' PRESERVED POTATO,

Reduced in Price.

THIS ECONOMICAL AND PURE VEGETABLE DIET, PROVED TO KEEP IN ALL CLIMATES, AND INVALUABLE WITH SALT PROVISIONS.

The Patentees of the PRESERVED POTATO solicit particular attention to the annexed PROFESSORS CERTIFICATES, GOVERNMENT SPECIAL REPORTS, &c. shewing the important advantages of the Potato in a preserved state, for Ship or Military Stores, for general domestic use, or for exportation to climates and situations, where that most desirable and nutritious Vegetable, (the Potato) is not obtainable, or only of an inferior growth or deteriorated state. EDWARDS' PATENT PRESERVED POTATO *possesses the inestimable property of keeping* unimpaired by time, or climate (and its cooking is effected in about ten minutes) proving an immense advantage over Potatoes in the natural state; which, on being stowed in bulk, incipient vegetation almost immediately ensues; causing a rapid loss in weight, and quickly rendering this valuable root positively unwholesome and unfit for food.

The PRESERVED POTATO is prepared from the finest Potatoes; and contains all the flavour and wholesome properties of the vegetable when in its best state; this is authenticated by the Certificates of Professors Brande, Daniell, Dr. Paris, &c; more particularly by the following chemical Analysis of Dr. Ure, Professor of Chemistry, &c.

"I hereby certify that Messrs. Edwards' Patent Preserved Potato, contains by Chemical Analysis, the whole nutritious principle of that root in a pure concentrated state that it contains

60 *parts in the hundred, at least of starch; nearly*
30 *of a soluble fibrine of demulcent antiscorbutic quality*
5 *of a vegetable albumine of the nature somewhat of the white of egg, and*
5 *of a lubricating gum.*

The fibrine and albumine render it more light of digestion, and the gum more demulcent to the stomach than wheat flour, with which, also, it may be regarded as nearly equally nutritious, and more so than peas, beans, sago, or arrow root.

ANDREW URE, M.D., FRS.

The value of Edwards' Patent Preserved Potato is proved in its adoption on the various scales of Victualling in the Royal Navy, Transport Services, &c., by H.M. Land and Emigration Commissioners, the Hon. East India Company, and the Mercantile Marine generally.

The great economy of Edwards' Patent Potato as a general ship's store, *(as well as comfort and essential to the health of the men,) is established by the scale of victualling for Troops, &c. The equivalent of ½lb. of the cooked vegetable being supplied three times a week, for 20 weeks, at a cost of about 3s. for each man.*

Confining the merits of the Patent Preserved Potato, merely to cheapness, no article of stores is less in price, and when its antiscorbutic and other valuable properties are considered, the advantages attending its use will be found to surpass every other description of provisions. Under the conviction of an extensive general demand, the Patentees offer the Preserved Potato to the public at a price (delivered in London, FOR CASH) that makes the vegetable, when cooked, as cheap as Potatoes in the ordinary state.

The Patent Preserved Potato is Cooked and ready for use in TEN MINUTES by the mere addition of BOILING WATER, in a basin or other vessel.

FOR MAKING A VALUABLE LIGHT PUDDING without SUET OR EGGS.

To ½lb. Preserved Potato add 1¼ *Pints of* BOILING WATER, *let it stand for* 12 *minutes then add* 1*lb. of Flour and a large tea spoonful of Salt, mixing the whole quickly together, tie in a Cloth, and boiled for* 2 *hours.*

D. & H. EDWARDS & Co., *Sole Patentees.*
1, Bishopsgate Street, Londo

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Professors' Certificates.

From Professor Brande, F.R.S., Royal Institution.

I have examined Messrs. Edwards and Company's Patent Preserved Potato, and am of opinion, that it is a convenient and unexceptionable article, and consists only of the pure vegetable, without any foreign admixture or colouring matter; that with common precaution it may be kept for any length of time, without liability to decay or change; and that its comparative nutritive powers are to those of the fresh Potato as about four to one—one pound of the Preserved Potato being the equivalent of about four pounds of the best fresh Petatoes.

William Thomas Brande.

From Dr. Ure, F.R.S.. Professor of Chemistry.

Messrs. Edwards' process for concentrating the nutritious powers of Potatoes, and preserving their qualities unimpaired for any length of time, and in any climate, is, in my opinion, the best hitherto devised for that purpose, and chemically considered, the best possible

I find that one pound of their Patent Potato, when cooked with about three pounds of water, affords a dish equal to a mash of fresh mealy Potatoes. When milk is used instead of water, then a much richer dish is obtained than can be formed from the best ordinary Potatoes boiled, because it is free from the water contained in fresh Potatoes, amounting to fully three-fourths of the weight. By adding eggs, sugar, and spices, to the milky mash, a delicious pudding may be made. Edwards' Patent Potato will be found an invaluable preparation, not only in sea voyages and tropical countries, but at home in the after part of the season, because it continues uniformly wholesome and agreeable, whereas by this time our Potatoes have become unsound from frost, growth, &c. It also possesses all the antiscorbutic properties of the fresh Potato.

Andrew Ure, M.D

From Professor Daniell, F.R.S., King's College.

Gentlemen.—I have carefully examined the several specimens of your Patent Preserved Potato, which you left with me, and have also read and considered the specification of your Patent, and have not the least hesitation in certifying, that it is a wholesome and agreeable preparation of the nutritious parts of the root, not distinguishable in flavor from fresh and well boiled mealy potatoes. I found no difference between the old and new samples.

If the directions of your specification are carefully followed, I have no doubt that the preparation will preserve its flavor and nutritious properties, in dry packages, for any length of time. When cooked as you direct, I find that the grains swell very much, and when of the usual consistence of well mashed Potatoes, that they have increased in weight from 1*lb.* to 4½*lbs.*

Messrs. Edwards & Co J. F. Daniell.

From Dr. Paris, F.R.S., President of the Royal College of Physicians, Author of the celebrated Treatise on iet, &c.

I have cooked some of the Patent Potato of Messrs. Edwards' and I consider it a very good substitute for the fresh root.

J. A. Paris.

From A. S. Taylor, Esq., Lecturer on Chemistry, Guy's Hospital.

I have examined the Patent Preserved Potato sent to me by Messrs. Edwards' and beg to certify that it contains all the nutritious properties of that vegetable, and that, in my opinion, it is well adapted as an article of food.

Alfred S. Taylor.

Memo—The Patent Preserved Potato having been tested and analyzed at Sydney, after the voyage from England, by the celebrated Dr. Bennet; he certifies that its nutritious and antiscorbutic qualities correspond in every respect with the analysis made by Dr. Ure.

N.B. By Analysis Edwards' Patent Potato is prepared only from the best quality and selected sound potatoes.

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Special Reports as required by, and made to, Her Majesty's Government, etc., etc.

Special Report on the Patent Preserved Potato, required by Dr. Gordon's letter, May 20, 1842, for the Army Medical Department.

The Preserved Potato, of Edwards and Co., was this day treated according to the printed directions contained in each bag, and was then tasted by each of the undersigned, as well as by many other persons, (Medical Officers and patients in the hospitals,) and all were of opinion, that the preparation, as far as they could discover, retained all the virtues of fresh potatoes, and was not less palatable.

The Board, therefore, consider the preparation as affording a most valuable article of diet, and are of opinion that it might be advantageously adopted as a portion of the ration of Soldiers proceeding on board ship to foreign stations.

In the event of its not being considered necessary by the Authorities to adopt it generally, they would particularly recommend that a quantity of it should be regularly put on board ships conveying troops, in order to be issued to such sick, as the Medical Officers in charge might consider it better adapted, than the articles of diet which it has hitherto been customary to substitute for salt provisions.

(Signed) Andrew Smith, M.D., P.M.O.
J. Kinnis, M.D., Staff Surgeon.
R. Dowse, Staff Surgeon, 2nd Cl.

General Hospital, Fort Pitt, 5th June, 1842.

(From the Right Hon. the Lords Commissioners of the Admiralty.)

Extract of Special Report on the Patent Preserved Potato from Dr. Wilson, Inspector of Hospitals, &c., dated on board H.M. Hospital ship Minden, at Chusan 17th April, 1843, *and addressed to Vice-Admiral Sir W. Parker, Commander-in-Chief in China and the East Indies.*

Respecting their general merits as an article of ration, I express the opinion, so far as I have had the means of judging, that they possess valuable qualities, they have the general characteristic of containing a large portion of nutriment, are easily cooked, and which is of much consequence as an article of diet, are palatable.

Extract of Special Report to Sir James McGrigor, Director-General Army Medical Department, London, dated Barbados, 19th April, 1843.

Sir.—I have tasted the Potato, and I agree with the certificates sent, that the preparation is wholesome and pleastnt to the taste, and I have ascertained by frequent inquiry in the hospitals, that the patients prefer this preparation to sweet potatoes, and to the yams they usually receive; and I am of opinion that, for sea stock for the troops serving in this command, and for use in hospitals when vegetables are scarce and dear it would be useful and acceptable in this command.

(Signed) H. Bone, M.D.,
Inspector-General of Hospitals.

Extract from Report on Edwards' Patent Preserved Potato and Rice, by Dr. Pereira, author of the celebrated Treatise on Food, &c.

Having been requested to give my opinion of the relative merits of Edwards' Preserved Potato and of rice as antiscorbutic articles of food, I beg to say thatI consider potatoes to possess valuable antiscorbutic properties, and rice to be devoid of them.

A few years ago when in consequence of the potato disease, the potato and other antiscorbutic vegetables became scarce and dear, Rice, Indian corn, and other kinds of grain, were substituted by the poorer classes, and in pauper establishments for the potato; the consequence was, the appearance of scurvy in a very aggravated form in many parts of England, Scotland, and Ireland.

The facts that were at that time brought to light, satisfied me that *rice* is incapable of preventing the appearance of *scurvy*, and that the potato is a most useful and valuable antiscorbutic.

I further believe Edwards' Patent Preserved Potato is a wholesome and nutritious food, and is especially adapted for general use as an antiscorbutic at sea.

(Signed) Jno. Pereira, M.D., F.R.S.,
London, July 30th, 1851. *Fellow of the Royal College of Physicians, &c.*

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LETTER FROM SIR WILLIAM BURNETT, K.C.H., F R.S., DIECTOR-GENERAL OF THE MEDICAL DEPARTMENT OF THE NAVY.

I have to acknowledge the receipt of your letter, enclosing testimonials from the Army Medical Department, as also from Naval Surgeons, of the highly beneficial effects of your Patent Preserved Potato as a Vegetable Diet, and in reply acquaint you, that I AM PERFECTLY SATISFIED THAT YOUR PREPARED POTATO FORMS A DESIRABLE ADDITION TO THE USUAL DIET AT SEA. WILLIAM BURNETT,

To Messrs. D. & H. Edwards and Co *Director General, &c.*

ARCTIC EXPEDITION.

Her Majesty's Ships Resolute and Assistance, Pioneer and Intrepid, Steam-Tenders, in search of Sir John Franklin, &c., 1850 *and* 1851.

We the Commanders and Officers employed in the Arctic Expedition under Captain Horatio Thomas Austin, C.B., feel bound to record our favourable testimony of the excellent properties of Edwards' Patent Preserved Potato. In fact we can scarcely speak too highly of it as a vegetable: being able to use it in various ways, it retained all the virtue, and much of the flavour of fresh mashed potato, during the whole voyage out and home, a period of eighteen months; and that remaining is as good and serviceable as ever. The men having been perfectly free from scurvy, we are induced to entertain a high opinion of its antiscorbutic properties. The whole of the people appeared to relish the Preserved Potato more with their salt meat than with anything else, and infinitely to prefer it to *rice*, or the mixed vegetable or carrots, with wh ch these ships were supplied.

Signed by the Officers and Surgeons of H.M.S. RESOLUTE,

ASSISTANCE, PIONEER, INTREPID.

Extract from Captain Horatio T. Austin, C.B., H.M.S., Resolute.

I feel it incumbent upon me to express the value I set upon this production (Edwards' preserved potato), for the use of the table during sea voyages. In my own case as well as in that of the ship's company of the *Resolute*, it was prized beyond rice, and as a substitute it is difficult to express its importance with salt provisions.' HORATIO T. AUSTIN.

From Admiral Sir John Ross.

I have much satisfaction in joining with other officers employed in the late Arctic Expedition, in the expression of the most unqualified and universal opinion of the excellent properties of Edwards' preserved potato, especially as an antiscorbutic, which has been fully established in the different ships and vessels lately employed in that trying climate, and I can have no hesitation in giving my strongest recommendation, that it should be liberally supplied to every ship employed on Foreign service. (Signed) JOHN ROSS.

CAPE OF GOOD HOPE.

Extracts from Special Reports made to H.M Government

Dr. Murtagh's Report of the eligibility of this article for Hospital use, I have the honour to enclose, and I beg to add that from my own daily observation of its use in the Hospitals, I perfectly concur in what he has stated. I had an opportunity of testing the article at His Excellency Sir Harry Smith's table, and was much pleased with its sweetness and perfect resemblance to the fresh vegetable, as, indeed, was every one else who was present at the Governor's table on that occasion. There happened to be a dish of fresh potatoes at dinner the same day, and all gave a preference to the preserved over the fresh vegetable. I am of opinion the virtues of the recent potato are well preserved in the Patent Preparation, and I think it would be of the greatest importance as an article of diet, both for sick and well, at such posts as Fort Cox and Fort White, &c., where the garrisons have been kept for many months isolated, and almost in a state of siege, and when fresh vegetables cannot be procured.

I beg therefore, most strongly to recommend that a supply be sent out with as little delay as possible, with ample instructions for its use pasted on each package. Scurvy has invariably followed war on this frontier on all former occasions. JOHN HALL, M.D.

King William's Town, Cape of Good Hope. *Inspector General of Hospitals.*

Samples and Particulars may be had at the Patentees Offices, 1, Bishopsgate Street, corner of Leadenhall Street, London, and of the principal Provision Merchants; the Agents at the out-ports of the United Kingdom, also in the East and West Indies, Colonies, &c., &c. D. & H. EDWARDS & Co., *Sole Patentees.*

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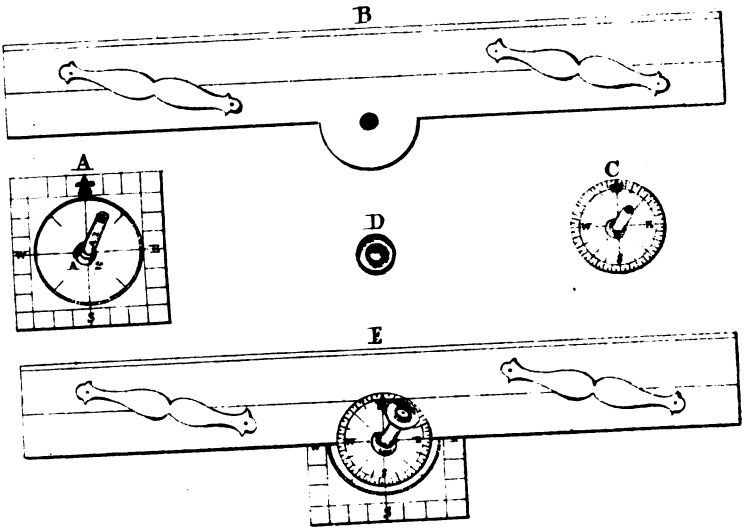

CAPTAIN TOYNBEE'S

"REVOLVING PARALLEL RULE."

REGISTERED SEPTEMBER, 1851.

MANUFACTURED AND SOLD BY

J. D. POTTER, 31, POULTRY, LONDON.

(Sole Agent for the sale of the Admiralty Charts.)

THE advantages of this instrument are as follow :—

1st.—By having the compass attached to the Ruler, bearings may be applied to Charts without its being requisite to slide a parallel ruler some distance over the Chart, so that time is saved and liability to error avoided; also several bearings may be taken with the instrument in the same position.

2nd.—The compass card may be set so as to show the true or magnetic bearings, or magnetic bearings affected by local deviation, depending upon the part of the world the ship is in, and the direction of her head.

3rd.—It will construct the figures of the different sailings, and lay down the angles of a survey in a very expeditious manner, no chord of sixty or protractor being required, a pair of compasses alone being requisite.

I will now explain its parts and the methods of using it.

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It consists of a square plate (A) cut round its edges with rectangular lines to represent the meridians and parallels of a Chart, and marked with the N. S. E. and W. points; within these edges is a circle divided into 360 degrees, numbered at every ten degrees from the N. and S., towards the E. and W. points.

In the centre of this plate, and perpendicular to it, is secured a pin (A 1) on which as a centre, a parallel ruler (B) is made to revolve, above the ruler, upon the same pin is a circular brass plate (C) divided into points and quarter points of the compass; this plate is so adjusted by means of a screw (D) and flange (A 2), as to be able to revolve round the pin or become a fixture at pleasure, leaving the parallel ruler free to revolve. E represents the instrument with all its parts put together. The back edge of the ruler bisects the circle below and compass card above it, pointing out, as the ruler is revolved, the angle which it makes with their respective meridians in degrees of the former, and points and quarter points of the latter. There is also an ivory table upon the ruler, containing every second point of the compass, and headed with "var. of comps.," and "local deviation." This table is to be filled in by the Navigator, with the variation for the part in which he is sailing, and the local deviation for every second point of the compass, marking them E. or W, according to their direction.

Now if the back edge of the ruler be brought to coincide with the N. and S. line of the square plate, and the compass card be revolved so as to bring its N. and S. points to coincide with that back edge and clamped there, it is manifest that when any one of the N. and S. lines of the square plate coincides with a meridian, or any one of its E. and W. lines with a parallel of a chart, then the circle shows in degrees, and the compass card in points and quarter points, the *true* bearing from one another of all places on the chart along the back edge of the ruler, also (these edges being parallel) of all places over which the other edge passes.

But the chief use of the compass card is that it may be adjusted so as to represent the ship's steering compass affected as it is by the combined influences of variation and local deviation.

An example will illustrate my meaning. Suppose then a ship to be entering the English Channel, where the variation is 25° W. and steering E. by S. with a local deviation on this course of 6° E., the one being E., and the other W. the difference, or 19° W., is their combined effect, now by revolving the back edge of the ruler 19° to the West of the North point of the square plate, and bringing the North point of the compass card to agree with that edge, and clamping it there, the card represents the steering compass so long as the ship remains upon that course.

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Suppose now that the Commander, knowing his position on the Chart, finds by means of this instrument the bearing of the Caskets to be E. by S. ½ S., they will have the same bearing from the steering compass, and an E. by S. course by it will weather them; but had no deviation been applied to the chart compass, E. by S. ½ S. by it would agree with E. by S. by the steering compass, which course if continued on would take the ship upon the Caskets. This, of course, is well known, I merely give the case to show that this method seems to lessen the liability to error in applying the local deviation, which to some is very perplexing, and by making its application simple, may induce many to allow for it who have previously neglected to do so.

Again suppose the above ship to be in exactly the same position, but steering W. by N. with a local deviation of 8° W. for that course, this added to the var. 25° W. (because they are of the same name) gives 33° W. for their combined effect, and the Caskets would bear S. E. by E. ¼ E. by the adjusted chart compass, as well as by the steering compass.

The application of the instrument is understood at first sight. The North point of the square plate must point Northwards on the Chart, and any one of its rectangular lines must coincide with any meridian or parallel. The centre of the square plate must be kept out of the line of direction of the bearings.

By a little practice it is found easy to place it so that it will lay down several bearings without moving the square plate.

By means of the circle the instrument lays down angles to degrees, and a scale of equal parts* upon it gives the length of the sides of a required figure.

To lay down a Survey it would be useful to have a compass card divided to degrees numbered from the North point 180 degrees each way, the rectangular lines being drawn round the margin of the paper would, like the meridians and parallels of a chart, supply the means for placing the instrument, and in laying down the plan any line having been drawn to make a required angle with another, before moving the parallel ruler the North point of the card may be revolved to coincide with the back edge of the ruler and clamped, then will the North and South line of the card represent the last line drawn, which may be carried to any other part of the paper, or another line may be drawn making any required angle with it, the same plan being followed throughout.

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* A scale can be applied if necessary.

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THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

FEBRUARY, 1852.

A Visit to Pitcairn Island on a Voyage from Otaheite to Valparaiso.—*By Mr. W. H. Dillon, Master-Commander of H.M.S. Cockatrice*, 1851.

On the afternoon of the 9th July, we ran out of Papeite Harbour with a fresh breeze from E.N.E., steering to the southward between Otaheite and Eimeo. At sunset, the wind became variable from the eastward, continuing so for the two following days, keeping us in sight of Otaheite until 5 P.M. on the 11th, when the wind freshened from the northward, drawing round to west and S.S.E. We took advantage of the northerly wind to get to the southward; when in lat. 24°S., long. 145° W., shaped a course directly for Pitcairn Island, and although the wind was exceedingly variable, with the exception of one or two days, (when it blew hard from the south-east with a very heavy sea,) it was generally favourable.

The position assigned to Incarnation Island, was passed within a few miles, but we saw nothing of it, and I am of opinion, from the enquiries as well as the experience of others, that, such an island *does not exist.* No land was seen after leaving Otaheite until midnight of the 25th July, when we made Pitcairn Island, bearing east, and in the morning were

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within two miles of the village. We soon observed a boat pulling towards us, from which half a dozen fine looking men (G. Adams and Arthur Quintal were of the number), jumped on our deck and shaking us cordially by the hands, gave us a hearty welcome to Pitcairn Island. They were delighted at our arrival, as they had been despairing of ever seeing a man-of-war again. It was so long since one had visited them, that they were afraid they had given some offence, and were no longer thought worthy of notice. I assured them that such was not the case, that circumstances over which the commander-in-chief had no control, entirely prevented his sending a vessel to the island last year, and to convince them of their not being forgotten, told them that I was the bearer of numerous presents and letters from their old friends. As soon as I could satisfy their anxious enquiries, I desired they would pull me on shore, which was eagerly complied with.

The landing place is in Bounty Bay; it is partly protected by a reef of rocks to the north-eastward from the heavy surf, generally rolling in there. On this day it was very smooth, and I landed easily: a rough path and very steep ascent leads to a level where the village is built. On arriving at the top a most interesting scene presented itself. The pastor (Mr. Nobbs), and all the inhabitants of the island, male and female (many of the latter very handsome and possessing great personal attraction,) dressed in a clean and pretty becoming manner, had assembled to greet and welcome us to the island; and after the heartiest salutation I ever experienced, they enquired most affectionately after Her Majesty and the Royal Family, and then pressed me with questions as to the non-appearance of a man-of-war for so long a period. The women especially were most importunate on the occasion, and exceedingly anxious to know if any thing wrong on their part was the cause. "Oh! why don't you come oftener?" was the question. "We have been longing to see you; they form the happiest hours of our lives—the few visits from our countrymen, and we have been watching for you days, and months, and years; you cannot think much of us, or you would never let us remain so long without coming to see if we were alive."

After pacifying them in the best manner I could, and answering all their enquiries about officers that had ever visited them, of whom they retain a lively and grateful recollection, I was conducted to the schoolhouse, a large and substantial building about fifty feet long by twenty wide; it is conveniently fitted up with desks and well furnished with slates, a well selected supply of moral and religious books, and other requisites for the instruction of youth. At one end there is a pulpit and a small space allotted for the use of the pastor; the house being used for a chapel on Sundays. The book containing the records of the island is kept here, it was handed to me for inspection; I found all the births, deaths, and marriages, duly registered in it, and also the number and name of the ships that have visited it since its occupation. The average number formerly was eight per annum, but in the last two or three years, there have been many more; for instance in 1850, there were forty-seven, of which

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seventeen were English, (principally from the colonies to California, and whalers), twenty-nine American (whalers), and one Hanoverian. This year they have already been visited by seven English and nine American ships. They speak very highly of the conduct of all, especially the whalers. It appears that many of them make a practice of calling there for a few supplies, such as yams, sweet potatoes, limes, oranges, fowls, and pigs, for which they receive in return coarse cotton goods, fish-hooks, biscuit, old lead, &c. The captains always caution any of their crews that land, not to molest the inhabitants in any way, or make use of bad language.

There are now (30th July, 1851,) 160 souls on the island, eighty-one males, and seventy-nine females. The average annual number of births eight, whilst, but four deaths have occurred in six years, (one of which was Susanna Young, the last survivor of the Bounty, who died July 15th, 1850, aged seventy-five years). There are at present fourteen males and nine females marriageable, unmarried. The whole community consists of twenty-three families inhabiting seventeen houses. The diseases they suffer mostly from, are rheumatism, asthma, ague, and billious attacks. The small-pox has never appeared amongst them, neither has a soul on the island been vaccinated—the attempt was made on a few some time since, but from the lymph being old or bad, it had not the desired effect. It is sad to contemplate such a disease breaking out there, yet it is not improbable, from their having intercourse occasionally with vessels crowded with passengers. I cautioned them particularly (on the assistant-surgeon's suggestion) not to communicate with any vessel until they ascertained there was no sickness on board. There were five passengers left on the island from the ship *Noble*, Captain Parker, from Sydney to California in April, 1850, the same ship also took one of the islanders (Matthew Quintal) away with them, who has since returned—he told me he was never happy or well whilst he was away, and every day of his absence appeared a year to him. The gentlemen left on the island were destitute of every thing except the suit of clothes they had on, but were clothed and fed, and treated in the most hospitable manner by the inhabitants, until their departure in another vessel about a month afterwards. They left the following testimony of their gratitude in the record book, which I have copied to show the goodness of the people in whom I now feel so much interest:—

Pitcairn Island, 12*th April*, 1850.

"We cannot leave Pitcairn Island without recording our thanks, not only for the hospitality shewn towards us by the kindhearted inhabitants, but even more for the general cordiality of our reception, and the delicacy with which it was manifested. Anxious as we were to be as little a burthen to them as possible (being aware that they had but little to spare for themselves) while obliged by necessity to be entirely depenent on them, having been left on shore from our vessel, with nothing but the clothes we stood in, we found it impossible to prevent them from supplying us with even a superfluous abundance; for they would

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listen to no refusal. We likewise wish to record our sense of the worthiness of the community, of the high tone of feeling both moral and religious, which universally pervades it, and of their loyalty to Queen and country. With heartiest good wishes for their welfare, which we hope for a future opportunity of proving in more than words, we bid them a kind farewell."

(Signed) "HUGH CARLTON.
"WALTER BRODIE.
"SAMUEL VAILE."

"The fact of my being left in common with the above gentlemen and another (a Mr. Taylor,) upon this island, where we had landed with permission of the captain, and being left destitute of every thing is recorded above. I have further to state that our property has been carried away, and that, but for the general kindness of the inhabitants, our position would have been one of unutterable suffering. As it is our personal losses are most severe. As for myself, I can only say that being so unworthily deserted, has caused me delays for which no recompense could ever repay me. Before leaving Pitcairn Island, I avail myself of the few moments left me to say, that more sympathy for the sufferings of others could never be shown in any part of the world. I attribute so much christian charity to the great pains which have been taken by my worthy friend, Mr. Nobbs, in the education of the Islanders and in the formation of their minds; and to himself and to the community in general, I render my heart-felt thanks for all we have received. I most sincerely hope that those having more immediate means to do this kind hearted community service, will do so. Wishing them every prosperity I leave this day by the schooner *Velocity*, bearing with me the most affectionate remembrance of their active friendship."

(Signed) "CHARLES DE THIERRY."

"I beg to add my name and thanks to the above."

(Signed) "ALLAN K. TAYLOR."

After I had seen every thing of interest in the school-room, I was conducted over the village, and at last lodged in the house of George Adams, it being his duty (as pilot of the boat) to entertain me, and which all on the island would have been proud to have done, to mark their delight at seeing us. Consequently his house was full of visitors, the women bringing offerings of fruit and flowers for the strangers. I was surprised to see a nice clean table cloth spread, with knives and forks, on which was soon placed a substantial dish of roast pig, yams, and sweet potatoes. The invitation to sit down and partake of it was given in so hearty a manner, that admitted of no refusal, but *I very willingly* took my place at the table and made an excellent meal. It was very nicely cooked after the Otaheitian fashion. Their substitute for bread is yams or plantains grated into a paste on a rough stone made for the purpose, and either baked or fried. That made from the yam very much

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resembles rice bread, the other is more like a pancake, both very good.

After dinner we took a walk to see a little of the island; some of the women accompanied us and entertained me very much by their lively and cheerful conversation. I learnt from it that they do the most laborious work, such as preparing the ground for planting, digging potatoes and yams, which they have to carry some distance to their houses, by rough and precipitous paths. They also thatch the houses, cook, wash, and attend to other domestic duties; whilst the men are employed building houses and other mechanical work, fishing and hunting the goats. The children have not much attention paid them after they can run about. When they are seven years old they are sent to school, and attend regularly until fourteen, consequently, there is no one on the island that cannot read and write. Most of them are exceedingly intelligent and well informed, indeed much more so than it is possible to conceive from their isolation and little intercourse with the world. But what must be remarkable to strangers more than anything else, is the happy manner in which they live together. There does not appear to be a jealousy or bad thought existing amongst them. The women in particular are very fond of each other. Such a thing as a quarrel between them *never occurs*, and nothing unpleasant can happen to any one on the island without its being a source of grief to all, they are so tied together by friendship and love. A magistrate is appointed yearly by a majority of votes; all, both male and female above the age of eighteen are voters. He has the management of the affairs of the island, and settles disputes, with the assistance of a jury if necessary. Should any decision be deemed unsatisfactory, they do not quarrel over it, but let the subject drop, and refer it by mutual consent to the captain of the first man-of-war that visits them, with the express understanding that his decision is final. The magistrate takes charge of any spirituous liquors that may be given them from ships visiting the island, and issues a small portion to any one who wishes it on holydays, of which they have but two in the year,—one to celebrate the arrival of the Bounty there in January, the other the Queen's birth-day. By this means, drunkenness is entirely avoided. I was told by Arthur Quintal, that such a crime had not taken place for thirteen years.

I returned to my vessel in the evening, much against my own, and their inclination, promising to visit them again before my departure. Bad weather set in with a very heavy surf, which obliged me to seek shelter under the lee of the island, and I almost despaired of being able to perform my promise, but I was astonished on Monday morning (about 9 o'clock) to find the whale boat from the island close alongside.

The poor fellows had at the risk of their lives, come out to bid me farewell, fearing I should not be able to remain until it moderated. The weather was *so bad* that I could not think of allowing them to return to the shore, I hoisted their boat up and made them as comfortable as possible. Fortunately the weather cleared up so much towards the evening, that I was enable to land with them, and although

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it was raining in torrents I found the young people at the landing place waiting to escort me to their houses, and passed that evening as *pleasantly as any one* of my life. The whole of the inhabitants assembled at the house where I was quartered, and after being properly arranged according to their voices, sang "God save the Queen," in excellent style, after which they gave me several hymns. The women have very pretty voices and good ears for music; they are very fond of it, and pass three evenings in each week in the study of this harmless and agreeable accomplishment. Mr. Carlton, one of the gentlemen who received their kind hospitalities, on being left behind there, taught them, and it may be conceived with what ardour they received his instructions, to make such rapid progress in three weeks. I felt very sorry that I had no one on board who could give them a few lessons, according to their request, or that I had not any music to leave them, but promised to procure some at Valparaiso if possible. The following morning I assembled all the elders of the island at the school-room, and settled two or three little disputes that had been referred to my decision, and afterwards had the pleasure of seeing the boxes I had brought, opened for distribution. It afforded me a great deal of amusement to see the curiosity and anxiety displayed on this occasion, and the bursts of rapturous gratitude when they found there were articles they stood most in need of. I observed amongst the packages, one from Madame Sigourney, and one from Mr. Banister (an American gentleman,) full of useful and valuable things. They told me that they had many kind friends in America who very often send them presents, and begged I would express their grateful acknowledgments, to any of their friends I may happen to meet; as also their earnest determination to endeavour (by their conduct) to deserve their gifts. It was with the greatest regret I took leave of these interesting islanders; the unsettled state of the weather added to other circumstances, prevented any longer delay, but it was with the utmost reluctance they were persuaded of the fact. The entire community accompanied me down to the boat, carrying with them pigs, kids, fowls, fruit, sweet potatoes, yams, &c., which they insisted on our taking as presents, and with a hearty embrace from all the women, I bid adieu to the happiest, *most moral* and *kind hearted* people it had been my lot to fall in with, during a long period of service in all parts of the habitable globe. I shall always look back to my visit to Pitcairn Island with the *greatest pleasure*, and wishing them all happiness, trust they may never be disturbed or molested in their peaceful abode.

The articles they are most in need of, are old lead, fish-hooks, slate pencils, common writing-paper, flannel, material for bed ticks, and coarse cottons.

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EXTRACTS *from the Remarks of H.M.S. Columbine,* (1849), *J. D. Hay, Commander on the Coast of China.*

Remarks, &c., January, 1849.

31st.—In company with Mr. Scott, and Mr. Crowdy, and Mr. Jackson, our consul, (whose hospitality to all the officers was conspicious), we paid a visit to the famous monastery of Kushan. The monastery is about 970 years old, carrying us back to the times of Alfred, and coeval with Oxford. We proceeded from the city on the 1st of February in chairs, about fifteen miles in a north-east direction, through well cultivated plains, thickly peopled. On arriving at the foot of the mountain which is about 3,200 feet high, we found a wall running round its base, and two neat and massive gates admitted us to the sacred precincts. A small stream crossed by a neat bridge, and on the banks of which some trees flourished, having been crossed, we commenced on foot our toilsome ascent. A zig-zag road about fourteen feet wide occasionally so steep as to be paved with steps, conducted us after a four-mile walk to the monastery, which is about 2,000 feet above the sea. The foot of the mountain to an elevation of about 1,000 feet is clothed with the *pinus moutana.* Above that elevation trees of every description appear to thrive, and the monastery covering about four acres is embosomed in a secluded dell, covered by magnificent timber of ancient growth. The fraternity is Buddhist and consists of 170 brethern. The Abbot a man of polished manners treated us with civility and gave us ample accommodation. On the ensuing day we visited the peak, and wandered over the grounds varied by foliage of every hue, and cascades, natural and artificial of every form, then left our kind friends.

February 12th.—We proceeded down the river to wait at the mouth for the *Scout.* Between this and the 17th we used every exertion to obtain pilots for the ship, and the *Scout,* in which we succeeded; and on the 20th the pilots carried both vessels out past the knoll, without shoaling the water to less than four fathoms. They, however, to keep this depth of water made a more tortuous course than the chart prescribed, and passed the knoll more to the southward than the line of the square hill on with it in Collinson's plan. On the necessity arising for a ship of more than twelve feet draught to enter the Min river, no difficulty would be experienced, if pilots were employed. By anchoring under the *White Dogs,* in the north-east Moonsoon, or at Matsushan at all seasons, a boat might easily procure a pilot, and the dangers of the navigation and shifting banks obviated by their local experience. If the Min be ever intended for a place of trade, her Majesty's ships should encourage the native pilots, who would eventually become as expert in the management of square-rigged ships as the pilots in the Canton River, and if assured of employment would no doubt have a pilot station at the *White Dog* group.

This evening the *Scout* parted company for Hong-kong.

July 28th.—A Parsee merchant having died at Canton, his body

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was brought down to Whampoa to be interred on the 29th. That community have a plot of ground which they rent as a cemetery. It is situated on a hill on Dane's Island at the upper end of Whampoa Reach. The Parsees pay for it through the English Consulate. At about noon I received an intimation that the funeral was to take place, but that the Parsees anticipated some opposition, which shortly after I found to be the case.

A very large and turbulent mob had assembled determined to stop the funeral. I decided at once on landing my marines and armed boats' crews, and proceeded with them to the spot. Their objection to the burial appeared to me to be a pretext for raising money, and the Consular agent agreeing with me in this view, I judged that the boldest and most determined course would be the safest.

Through the interpreter I commenced a parley with some of the most respectable looking, and in the mean time suddenly ordered the 2nd Lieutenant to seize on and hold the hill, which, the crowd being taken by surprise, he effected, and then landed the body and carried it up with a guard, without firing a shot, or once using a bayonet. For this service we received the thanks of the Governor of Hong-kong, the senior naval officer, and of the Parsee Mercantile Communities.

On the 4th July being at the Consulate, Dr. Bowring the Consul, Lieutenant Bridges, and Mr. Ball an American Missionary, succeeded with myself in walking round the walls of Canton without much molestation. I must say when we started, which we did at 5 A.M., I hardly anticipated getting back in a whole skin, but our guide Dr. Ball, spoke the dialect remarkably well, and was recognized as a Syuntzing or teacher, and much respected, so that we returned at eight o'clock in safety, having examined the forts at the back of the city, which when once captured, no very difficult operation, are the city's worst foes. We were a little abused, however, in our walk in some of the very bad localities which adjoined the wall.

Aug.—During the whole of our stay at Whampoa, we avoided as much as possible drinking the river water, and by occasionally visiting Hong-kong re-established the health of the ship's company, obtaining there some drinking water of the best description. Whenever we did want water at Whampoa, I caused it to be procured from a spring on Dane's Island, which afforded about one ton per day. I should recommend this precaution to all ships stationed in this river.

We experienced the greatest civility from the inhabitants of Dane's Island and of French Island, round one of which islands I walked sometimes alone almost every evening, and certainly every morning of our stay. I was never molested, and so civil were they that six of the ship's company had leave in rotation every day, and never in the four months was there any disturbance arising from this cause.

Sept. 14th.—We experienced a Typhoon, the heaviest part of which from north-east to north-west, we rode out during the night in Anson's Bay. It adds another to the many proofs of the truth of the hurricane theory. The centre having passed a little to the southward of Hong-kong,

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reached St. John's on the 17th, and there caused shipwreck to seventeen sail of Shapng-tzai's fleet, which was at anchor in Satter Bay, Howcheun Island, and which place I visited in the *Phlegethon* steamer. On the 20th, when in search of that chief. I went into Boddams Cove, in Portoy Island (one of the Grand Ladrone Group.) It is a very snug anchorage for one or two ships, mooring to the shore, but a sailing ship could hardly warp or tow out with the wind fresh from the eastward. I would, however, with a very low barometer off the Grand Ladrone, prefer to go into Boddams Cove for shelter, rather than suffer a Typhoon at sea off those islands. There are no dangers at the entrance of the cove, and when in and secured to the shore, nothing could disturb a vessel.

23rd—Some information of a piratical fleet in the neighbourhood of Hainan having reached Captain Troubridge, he sailed in *Amazon* with *Phlegethon* to search the coast, leaving me temporarily senior officer at Hong-Kong. The U.S. American Commodore, having written to Captain Troubridge this morning from Macao, to say that he had detained two piratical vessels, who had been prowling near the receiving vessels, and had some English merchandize on board, which they could not account for, and that he wished to give them up to us, I consulted with Mr. Bonham, the Plenipotentiary, and decided to go over and take charge of them. I sailed for Macao, where we arrived at 6h. 30m. P.M., and having seen Captain Gedney, U.S.N. of U.S.S. *Plymouth*, I went on shore to call on Commodore Gersinger, with whom I arranged to take over the 1st and 3rd Lieutenants of the *Plymouth* as witnesses, and I placed an officer and prize crew in each vessel. At 6 A.M., having sent Mr. Walker, (mate,) and Mr. Goddard, (midshipman,) with prize crews on board, we wayed; and Mr. Walker's sailing badly took her in tow.

24th.—Mr. Goddard having unavoidably parted company at nightfall, found himself surrounded by some other piratical vessels, and very properly bore up and took refuge under the guns of the *Plymouth*. As he was unable to fetch the place where I waited for him under Santao, Captain Gedney most kindly sent an officer and additional force, under Mr. Goddard's orders, and although the officer was senior in rank to Mr. Goddard, with the most positive written order to obey him. Captain Gedney's delicacy in this affair was very praiseworthy. The prize reached in safety on the 26th.

27th.—On arriving at Hong-Kong, I found from Commander Willcox, of the *Fury*, who had arrived during my absence, that Sir Francis Collier had parted company with him in the *Hastings* a few days before. Both the American prizes under my convoy, having arrived in safety; I determined on the suggestion of Mr Bonham, to proceed to sea at night, in search of a piratical fleet, reported to have attacked the town of Pinghoi, in Haarlem Bay, a few (two) days before. The admiral being so close at hand, I did not like to employ H.M.S. *Fury*, for coal was so scarce at the time, that only 200 tons were procurable for the Queen's service, and the information though good, was Chinese, and not

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to be relied on. I therefore turned the station orders and letters over to Commander Willcox, wrote to Commander Lyons of the *Pilot*, to be on the look out at Amoy, and having embarked, Mr. D. R. Caldwell, of the police force, (an officer who speaks the Chinese dialect of the South like a native), and the two Chinese who had brought the information, I proceeded to sea, and the wind being very scant, swept out through the Lymoon Pass. The two Chinese on board, one of whom was a respectable person, and would take no money, told me that Chai-a-poo, the murderer of Captain D'Acosta and Captain Dwyer, and vice-Admiral of Shapng-tzai's fleet, had lately separated from that noted chief, and had come with upwards of twenty sail to Haarlem Bay, blockaded the harbour and burned the port.

28th.—That he (my informant), and his companion, having volunteered to seek the English assistance rather than permit their townsmen to pay a ransom, had carried their small boat across the neck of land at the back of Fokai Point and come down in it to Hong-Kong. In the evening we reached Haarlem Bay, and were told that Pinghoi had been forced to pay the ransom the day before, and that fourteen sail of the pirate fleet had gone on to attack the town of Tysammu, in Honghai Bay. I continued the pursuit, and had intended to anchor until daylight at the mouth of Tysammu Inlet, and for this purpose had commenced to shorten sail, when about eleven at night, we saw a village smouldering, his sure handy work, and shortly after observed two well formed lines of seven sail each, running to the south-west. I again made sail and stood on until I could fetch the rear ship of the lee line and tacked; but the wind heading us off a little we fetched at about a quarter before midnight, three from the rear of the lee line, and passing under the stem of a large nineteen gun-vessel, hailed him to know who he might be. He replied to Mr. Caldwell (who was with me on the forecastle) that he was an honest trader, bound with a cargo of salt to Hong-Kong, and that he knew nothing about his companions. I then desired him through Mr. Caldwell to heave to that I might examine him, threatening otherwise to fire. In the mean time we could see him tricing up fire-balls, stink pots, and boarding nettings. And so cautioning him once more for the sake of humanity, I commenced the action with three rounds quick firing, at about ten yards, which he returned with much spirit.

29th.—I then wore, firing my port guns into his second astern, whom we soon silenced as well as his follower, compelling them to desert them. I now found the disadvantage of a tiller and no wheel, for it was impossible to manœuvre the ship and fight the stern guns, and as my first antagonist had now a good position, he raked me twice before I could return his fire. At last having got round, we punished him severely, but the leading ships of his line having gone on, and the weather line still holding its course, apparently with the intention of sacrificing a ship or two to save the others, the firing and calm separated us for a time, and as they swept faster than we did, the action ceased excepting a few distant shots. We continued the pursuit, occasionally sweep-

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ing, and though a mist obscured them for a time, at daylight we saw them about a mile and a half from us, running in line abreast, with a light air from the eastward. At about 11h. 25m. A.M., when the chace seemed nearly hopeless, the whole line hauled to the wind together on the starboard tack, as if with the intention of giving battle, but in a few minutes the cause became apparent. To our joy, the P. & O. S. V. *Canton* came round Fokai Point from to leeward, and I hoisted Marryat's signal "All in sight are enemy." She did not need this to stimulate her exertions. Without waiting to make out the signal, she commenced firing on the head of the line, and then came within hail. I went on board, (having authorized the person who went with me, to charter if possible), and found that she was chartered by an American gentleman, to go in search of a missing vessel the *Coquette*, supposed to have struck on the Pratas Shoal, during the late Typhoon. He would not forego the charter, but most liberally put her at my disposal, and her master Mr. Jameson, agreed to it. She then took us in tow and brought us within 1000 yards of one of the largest, on our way sinking one, and compelling the crew of another to jump overboard, whilst many more of the crews deserted from the others. Upwards of 200 were passed in the water, and others in boats pulling for the shore.

The *Canton*, however, was built of iron, and one shot having gone through her at some risk to her engines and steam chest, I cast off tow. Off Coast Islet, about nine miles east of Fokai Point, is a small inlet, Pank Island, not surveyed, although described in Captain Collinson's directions. Into this our immediate antagonist ran in close action, and I followed. We took the ground. But the pinnace and cutter were immediately hoisted out, and sent in under Lieut. H. Bridges, first lieutenant, Mr. Charles R. Goddard, midshipman; Mr. Charles Crowdy, midshipman in the pinnace; and Mr. George R. Harvey, midshipman; and Mr. James R. Bleufold, clerk, in the cutter to cut her out, and our gallant friend Captain Watkins, the American also volunteered to assist. They succeeded—he had anchored out of sight of us in the ship, and up at the head of the creek in which we were aground. A small Chinese fort opened a harmless fire on him and he was at bay. At last driven from his guns by the shot of our boats,—Bridges carried him by boarding, and the pirate with the impetus of despair, rushed below to blow them into the air, and two marines and a seaman were killed, and Mr. Charles Goddard, a most promising young officer, mortally wounded: whilst our wounded were increased to three marines severely; two seamen dangerously, and four slightly wounded. Thomas Hardiman, and Thomas Cook, boatswain's mates, distinguished themselves. The whole of the pirates but one were destroyed—we kept him for information. The few that reached the shore after the explosion were mercilessly butchered by their own countrymen, who came down to thank us. In the mean time we had hard work in getting the ship off. All the gun-room officers, purser, and surgeon, &c., worked at the capstan, and when off, the *Canton* towed us out. When the boats returned we went down in tow of the *Canton* to Haarlem Bay, and found that the rest of the pirate fleet were in Mirs Bay.

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30th.—I arranged for the *Canton* to return to Hong-Kong with our wounded, and a despatch to the Admiral, of whose arrival at Hong-Kong during my absence, the *Canton* had apprized me. The *Canton* reached Hong-Kong about 2 P.M., and landed the wounded, all but poor young Goddard, who died on the passage. The Admiral immediately despatched the force I had requested, which arrived early on the 1st of October. In the mean time being very shorthanded, and to leeward of this large force, I had my cable ready for slipping—top-sail yards hoisted up and furled with rope yarn, and a man on each yard ready to cut them and let fall the sail. Loaded all the guns with grape depressed, and to each gun lashed a sweep, with orders not to fire until the boats touched them, which would insure correctness of aim in the dark. The pirates did not attempt to come out, and shortly after midnight to our great happiness the *Fury* arrived, bringing every thing we wanted.

October 1st.—At 5h. 15m. A.M., *Fury* took us in tow and wayed, and we proceeded about fifteen miles to the Pagoda, further than this we had no chart. So having to grope our way, I left the *Columbine* and proceeded in the *Fury* with all the boats up a creek, in the north-west corner of Mirs Bay, screened by innumerable islands. It had upwards of three fathoms all the way, and the name is Loong-shan-foo, or Ram's horn, in the Chinese dialect. Here we found twenty-three sail ready to receive us; about 500 tons each, and mounting from twelve to eighteen guns; and three new vessels on the stocks. They hoisted their colours and opened a heavy fire on the *Fury*, but her shell destroyed and set on fire several, which soon communicated to the others, and by night the twenty-six were destroyed and about 400 guns also rendered useless. Only two men were wounded on board the *Fury*. Thus we had the satisfaction of completing the destruction of this formidable fleet, which had given so much terror to the coast during the summer. Lieutenant Sericald, second lieutenant, the first being in the boats, on hearing the firing, with commendable zeal had brought the *Columbine* up the narrow channel, but too late to join in the action.

4th.—On the 4th we returned to Hong-Kong, and the Admiral ordered me to prepare an expedition to proceed to the westward in search of Shapng-tzai. Having received my final orders, we sailed in the *Columbine*, with H.M.S. *Fury*, Commander Willcox, and the Hon. E. I. C. S. V. *Phelegethon*, under my orders. A party of seamen from the *Hastings*, under Lieutenant George Hancock, (acting flag lieutenant) who had volunteered, (Lieutenant Luard being ill), and a party of marines under Captain Moore, also were embarked. Mr. D. R. Caldwell as interpreter, and Mr. Soames as pilot, for certain places, also went with me. Having found that the congreve rockets of 1842, were nearly useless, we exchanged them for 1846, which was a most useful exchange. We first proceeded to the Concock, and in the morning wayed from that place.

(To be concluded in our next.)

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Horsbourgh Lighthouse, Near Singapore.

A correspondent informs us that this important beacon has just been lighted.* To Mr. J. T. Thomson, government-surveyor, Singapore, the mariner is indebted both for the design, and, as in all works of similar difficulty, for its superintendence, which involved much personal risk and discomfort, as well as great forethought and indefatigable perseverence. The dome, lanterns, and optical apparatus, which latter is on the holophotal system, were prepared at Edinburgh, under the directions of Messrs. Stevenson, civil engineers; and, with the exception of these, the whole is of native workmanship.

The Horsburgh Lighthouse, which was so named as a just tribute of respect to the merits of the late distinguished hydrographer of the India House, is erected on the Pedra Branca Rock, situated ten miles from the nearest land, and forty from any place where supplies can be had. The rock measures, at high water, about 100 feet by 150 feet. In a letter just received from Mr. Thomson, he mentions the following interesting particulars:—"The sea does not, at any time, break against the building (which measures, from the water up to the centre of the light, ninety-five feet), though a considerable spray goes on the rock. This, of course, rendered it unnecessary to build the lighthouse on the principle of the three great works in Britain (the Eddystone, Bell Rock, and Skerryvore). The work may be considered curious, for the tower was built by Chinese and natives of India; of whom, about fifty souls were generally employed at the rock. None of them could talk English, and one-tenth of whom could only speak, imperfectly, Malay (the language of these parts). What is still more curious, there were, at times, three classes of Chinese, none of whom could speak each other's language, being as different as French is to English. Besides these, were Malays, Javanese, Boyans, Klings, Bengalese, Papuas, from New Guinea; Rawas, from the interior of Sumatra; which, with English, counted eleven languages. Such confusion of tongues was there, at times, as to be a very Babel! The Chinese, who were the most numerous, had to be mostly directed by signs." In spite of these most discouraging difficulties, Mr. Thomson brought his arduous labours to a successful issue in a remarkably rapid manner, and at an astonishingly small cost. The work was commenced on the 11th April, 1850: the last stone was laid on the 1st June, 1851; and the light was ready to be shown by the 20th September 1851. The expense was only about £4,000 for the building, and about £1,400 for all expenses connected with the lantern, dome, and optical apparatus. The whole cost, therefore, exclusive of gun-boats for protection, wooding, watering, and the occasional presence of a government steamer, was only about £5,400. All the exposed stonework is of granite, from Pulo Ubin. Before fixing upon the exact position and design of the tower, Mr. Thomson had recourse to the ingenious expedient of testing the violence and direction of the waves, by attaching to the rocks with cement, isolated pillars of brickwork.

* See "Notice" in our last number.

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The light apparatus is one of the forms of the holophotal system which was invented by Mr. Thomas Stevenson, of Edinburgh. It consists of nine truncated, parabolic, silver-plated reflectors, twenty-five inches in diameter, with hemispherical reflectors behind, and a set of holophotal prisms, with a lens in front, so as completely to inclose, and usefully to employ, the whole of the sphere of diverging rays which proceed from the flame. Mr. Thomson thus describes the effect of the light:—"The light was shown exactly at 6, when the sun sinks under the horizon: the effect was dazzling at half a-mile distance. We proceeded on our return to Singapore until it sank, at fifteen miles distance, below the horizon. I found that it was never invisible till we gained a distance of nine miles, when the interval between the flashes became eclipsed. This I consider a great desideratum supplied, as ships, when tacking out or in, can take their bearings at any moment: and at a further distance than seven miles, ships are either well out to sea, free from dangers, or well into the straits. At a distance of fifteen miles the bright period appeared to be about four to five seconds. When we lost sight of it, it had still the magnitude of the planets Jupiter and Venus —The light possessess all the advantages required by the mariner."

The *Singapore Free Press* thus describes the first illumination:—"Three hearty cheers welcomed to life the meteor-like brilliancy which will probably serve to guide the midnight path of the mariner for a thousand years to come. A breathless silence ensued, as every one seemed absorbed in watching the flashes which appeared each minute, and lighted up the surface of the sea for more than a mile around the tower.—It disappeared below the horizon at fifteen miles; but it still continued visible to those who ascended the rigging for nearly an hour afterwards, and it was the general opinion that the light will be seen as brilliant as ever at a distance of twenty miles."

We have only, in conclusion, to congratutate Mr. Thomson on the successful completion of his arduous undertaking, and we trust that he will give some detailed description of the operations; the more so as it will afford an interesting proof of the growing resources of our distant settlements, which are fouud adequate in science and in wealth to the creation of so important a work as that of the lighthouse on the Pedra Branca Rock.—*From the Civil Engineers' Journal.*

Holyhead Lighthouse.

We extract from the *Liverpool Albion* the following account of what has been done since the passing of the act for the formation of the above harbour, and what is the present condition of the works:—

"The act was obtained on the evidence given that a harbour of refuge would be one of great public utility, and that it could be completed in seven years for the sum of £628,083.

"Mr. Rendel divided the estimate of the cost into two distinct parts.

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First, for the rough breakwaters, or rubble-stone work, and, secondly, for the dressed masonry necessary for encasing the rubble-stone work. The former he calculated could be completed in three or four summers, at an expense of—

	£	s.	d.	£	s.	d.
For North Breakwater. rubble-stone	174,335	5	0			
Contingencies, superintendence, &c., at 15 per cent.	25,823	15	0			
				200,159	0	0
For East Breakwater, rubble-stone	38,639	8	0			
Contingencies, superintendence, &c., at 15 per cent . . .	5,795	17	0			
				44,435	5	0
Total expense of Rough Breakwaters .				£244,594	5	0

"For the completion of the masonary for encasing these breakwaters, Mr. Rendel calculated that a further sum of £383,4880. 15s. would be required. He proposed to build the whole extent of the rough breakwaters continuously up to a certain height, until they reached low-water level; and when this was effected, in, as Mr. Rendel calculated, three or four years, he proposed to commence building the masonry for facing them, which further work he expected to complete in three years more; in all seven years.

"The act having been obtained, the Admiralty seem, in the first place, to have been impressed with the idea that the estimate of Messrs. Ackroyd and Co., was not sufficiently moderate, and in order to satisfy themselves on this point, they arrived at the conclusion that it would be more advisable to offer the contract for public competition. Messrs. Ackroyd and Co., tendered for the whole of the works, at £604,994. The Admiralty, however, for some reason or other which is not intelligible, without explanation, determined, in the first instance, to receive tenders only for a portion of the works.

"It will be observed, at the time when the Act was passed, the bay which it was proposed to enclose was in a state of nature. In order to convey the mountain into the sea, from the respective points of Soldiers' Point and Salt Island, it was necessary that a road should be made to each of them from the intended quarry. The Admiralty advertised for tenders for constructing these roads round the bay; but, for some reasons which are still more inexplicable, they coupled with these roads a portion of the masonry which was to unite the landward end of the East Breakwater with Salt Island. This masonry was to be of ashlar stone, and it is understood that several contractors tendered for it, amongst others, Messrs. Ackroyd and Co., and Messrs. Rigby and Co. The tender given by the latter, for the masonry and roads, is supposed to have been the lowest, and amounted to the sum of £90,000. Messrs. Rigby and Co., proceeded with and completed the roads, but as yet no part of the masonry contracted for at the East Breakwater has been

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commenced. Why, therefore, it was tendered for at so early a period it is difficult to imagine.

"The roads having been completed, the Admiralty next proceeded with the North Breakwater. No more tenders, however, were advertised for; and it is understood, that this great portion of the work is being proceeded with upon some private arrangement existing between the Admiralty and Messrs. Rigby and Co., by which the contractors are paid at a certain rate for every ton of stone which is deposited in the sea: an excellent arrangement for the contractors, as they are thus sheltered from all risk of loss.

"At present the only portion of the work in progress is the North Breakwater, which is carried out in the following manner:—

"A railway is formed from the quarry to the extreme end of Soldiers' Point. Beyond this, a wooden staging has been run out into the sea, not for the whole length of the breakwater, as at first proposed by Mr. Rendel, but for about a third part only of the distance. The top of the staging is considerably above high-water mark. The depth of the sea at low-water, in the line of the breakwater, varies from thirty to fifty feet; the tide rising, on an average, to a further height of seventeen feet in spring tides and seven feet in neaps. Along the top of the staging are railways capable of sustaining the weight of a locomotive engine and a number of trucks. The rough breakwater is formed by rubble-stone, brought from the mountain and dropped, through the staging, into the sea. The operation is exceedingly simple: the rubble-stone is tumbled into the water, and is then left to be dealt with by the sea, which arranges the deposit in the manner best suited to form a consolidated mass; and it is calculated that, when a sufficient portion of the mountain has been dropped into the sea, there will be formed a breakwater which will have an average base of some 600 feet, and a top surface of about fifty feet in width. The slopes, it is understood, will be faced with dressed stone to a certain extent, similar to the fine specimen which has been executed for about 100 yards at the seaward side of Soldiers' Point. When the whole is complete, protected by batteries, and ornamented by lighthouses, observatories, and telegraphs, it will no doubt present a very interesting, if not a useful, monument of industry and perseverance.

"It must not be supposed that this method of forming a breakwater is unscientific: it is quite the reverse. That a breakwater of any magnitude could not be constructed by man without the natural forces of the sea, was discovered by the French, in their attempts to form the great breakwater at Cherbourg. They tried in the first instance, to inclose that famous harbour by sinking truncated cones of wood, filled with rock, at certain distances from each other; but the sea soon washed these contrivances to pieces, and recourse was then had to depositing stone, and when, by the action of the sea, this had become sufficiently arranged and consolidated, it was then cased with dressed masonry. This mode of procedure was first proposed by Monsieur Cachin, the celebrated French engineer. He says, 'If man be strong enough to

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heap together rocks in the midst of the ocean, the action of the sea alone can dispose them in the manner most likly to insure their stability.' Mr. Rendel, therefore, in the present instance, is acting upon experience in the mode of operation which he is now pursuing.

"It has been stated that Mr. Rendel originally intended to proceed with the rough breakwaters continuously and simultaneously, that is, to construct the entirety of the works under water before he commenced the superincumbent masonry. He says, in his evidence. 'Dropping in stone in the way of an embankment for a railway would be very bad engineering indeed; because you would always have the end of the breakwater exposed to the beat of the sea, and you would be constantly having derangements; but if we begin to deposit at the bottom and bring it up in layers, say ten, fifteen, or twenty feet high, we get our work so perfectly secure that the sea does not operate on that below low-water, so as to damage it. We bring it up to a certain height in low-water and finish it off in a year or a year and a half, having only the risk of that year and a half to contend with, instead of the whole time the breakwater is being constructed.'

"The breakwater is being proceeded with, not in layers continuously, to a level below low-water mark, but as an embankment. The only difference between it and a railway embankment being, in the *modus operandi*, by dropping the stone through a staging instead of emptying it over a tip.

"As regards the progress made in the works, it is evident that only about one-third part is in a course of construction, and this is evidenced to the mind, more by the erection of the staging, and the passing to and fro of the locomotives and trucks than by any appearance of the breakwater itself; for, when viewed at high-water, from any point of vision whatever, all that is presented to the eye of this magnificent breakwater is a few ridges of rubble-rocks interspersed amongst the timbers of the staging.

"The east breakwater has not yet been commenced upon, with the exception of a portion of the staging which has been run out as far to seaward as low-water mark.

"At present there are employed upon these works about 1500 men, most of whom are occupied in quarrying stone. They work in relays, night and day. They are assisted by four locomotive engines. This mass of mind and matter is able every day to accomplish a removal into the sea of about 2,000 tons weight of the mountain; and so the work proceeds, 'dragging its slow length along.'

The Strait of Magellan, &c. &c.—*A Nautical Sketch.*

Leaving the Pacific, we will now proceed round Cape Horn, the southern insulated portion of America (save the rocks of Diego Ramirez), which has gained some notoriety from the stormy weather that generally prevails off it, and the disasters which were experienced by the

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English and Spanish squadrons respectively under the command of Commodore Anson, and Admiral Pizarro, in the eighteenth century.

The circumstances which occurred during this expedition of the English, and the efforts of the Spaniards to frustrate it, gave rise to one of the pleasantest narratives of sea adventure that ever amused the world; and if no other effect had followed from the voyage than that of the capture of the *Galleon*, with her immense treasure, it was sufficient to show to the seaman, that no difficulties or dangers should discourage him from persevering to the last extremity, to accomplish the orders with which he is charged. In that light alone the voyage has been of incalculable service to the navy; and it will remain a brilliant example of what the hardy and noble spirits of that glorious profession are capable of performing under the most trying and discouraging circumstances, and a lesson to the future enemies of this Great Nation, whose peculiar field of action is the ocean. Doubtless, the book will be found by the side of its worthy literary compatriot Dibdins' Sea Songs, in the seaman's library of our ships of war.

The Magellanic Strait was an odd split of natures,' if it were formed by convulsion. Perhaps, at the upheaval, the Tierra del Fuego made its appearance subsequently to the continent. However, in whatever way it may have been formed, it is a convenient short-cut for steamers; and would be for sailing vessels if a dozen steam-tugs were therein stationed: coal probably will be found in Patagonia, and such a discovery would, there is scarcely a doubt, give rise to an establishment of the sort.

What are the geological features of the two opposite coasts? I do not know if any of the disciples of that science have brought their laudable inquisitiveness and note-books to this nether end of the "New world," to determine the mode of separation, or, otherwise, the periods of rise: I think none have visited the locality, for such a purpose at least.

The land portion of the globe although occupying less space over its surface, is still so extensive, that the remoter parts of minor demensions, give place to those of a grander scale, and of more convenient access; yet the field is so wide that much of the latter remains to be examined. Nevertheless, when we survey what those ardent spirits have absolutely accomplished, we cannot but be impressed with wonder that so much has been done, especially considering the comparatively recent date of systematic investigation.

Of the insular lands in the vicinity, I have already spoken briefly. The main land was called Patagon by Magellan; the Spaniards named it Magellania in honour of its discoverer; the former however, has prevailed in a latinized form. The Portuguese navigator (in the service of Spain) death cheated out of his full measure of *eclât*, and it fell to the lot of his second to accomplish the great feat, and to have the fact recorded in the motto awarded to him.—"*Primus circumdiste me.*"

The equestrian tribe of savages who were magnified into giants by the early voyagers, are known by the name of *Tehuels*: their general height is from six to seven feet; their shoulders are broad and thick; seated on horseback, and clothed in skins, no doubt they appeared to the European visitor, of an unusually large size. The native occupiers of the land,

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have remained unmolested since the beginning of the sixteenth century; and probably will remain so until the country be examined with a view to ascertain the value of its indigenous productions. As a route, the Strait, perhaps, will be abandoned, when a navigable canal shall have been formed across the Isthmus of Darien.

There is scarcely a place in any part of the maritime world which is not capable in some product or other, or in some way, of ministering to the supplies of commerce, or to the accommodation of trafficking voyagers. If the land, or ice-covered rocks, yields no article that may be productive of gold in a market, it may afford shelter, water, wood, &c., and the sea around be prolific in animal treasures. The Strait of Magellan is not an exception, indeed, about five hundred miles southerly, our hardy seamen have become acquainted with a series of ice-bound rocky islands (of volcanic origin apparently) which have proved a profitable field of enterprise, as whales frequent the sea around them, and the phoca tribes inhabit the coasts. The islands are barren; bare rocks being the predominant feature of their structure.

These islands were seen by a Dutch navigator, long before their rediscovery by the English merchant Captain Smith; and there is evidence that a ship, probably one of Pizaro's squadron, was wrecked upon one of the group. Captain Cook appears to have passed near their position, perhaps in thick weather, without being aware of the circumstance. How far towards the Pole these islands stretch, has not been determined; if however, there are others to the southward, a wide channel must divide them from those lying northerly, as the latter have been sailed round by different vessels. They were brought into general notice by an enterprising naval officer, Master Weddell, who with laudable ardour pushed on to a higher latitude than had previously been reached.

The Tierra del Fuego is not inviting to the colonizing European; the Southern Ocean however, has enticed the enterprising shipowner, and hundreds of vessels have therein reaped a plentiful harvest. But, we live in an age of progress and activity, and men who are engaged in commerce and adventure are seldom content with one pursuit, however much it may advance their interests: a new speculation gives zest to their spirit of enterprise, and in the Anglo-Saxon race especially, this has been wonderfully exemplified by the indefatigable ardour with which they have searched the nooks and corners of the world for articles of traffic, and gained a wide footing over its surface. In peering about whilst in search of something rare, a new source of profit arose before the enquiring eyes of an adventurer, a few years ago, which the turn-a-penny enthusiast seized upon with avidity.

The eagerness with which the pursuit was followed could not have been surpassed by the zeal of the worshipers of the 'Philosopher's stone' of old. We allude to the *Guano-mania!*

The *dips* of Potosi and Real del Monte, which had so much engaged the attention of British speculators, lost the great attraction which imagination had given to the mines upon the single consideration that the gold ore would be obtained in an incredibly short period of time by the aid of steam machinery; when it was found out that the exuviæ of birds

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was likely to prove a more profitable, and, unquestionably, a less expensive field for the investment of capital, as it was to be procured in some places for the mere trouble of gathering.

When the project was mooted, Mr. Bull, as is his wont, became almost frantic with joy—he rubbed his hands, and was vociferous during his energetic exertions to be first in the field; and in his mad desire to beat competitors out of it by simply forestalling them, he launched hundreds of his craft "helter-skelter," upon the ocean, and away they flew, like a flock of hungry gulls, each striving to be foremost. The pouring-out can only be likened to an Italian carnival, or a Parisian croud on *le jour del'an!* From one end of his busy land to the other, the affair became a *locus communis;* nothing was so loudly and earnestly spoken of as the surprising qualities of the new manure—guano, was in every body's thoughts—it would be not only the making of the farmer —a privileged growler ever—but keep famine away, at least from Ireland and may be', pay off some large slice of the national debt!

By the way, speaking of the national debt—I have heard it asserted that it is of incalculable advantage to the nation! At first I considered this a strange problem—a problem I thought not likely to be very readily solved by any individual who had to pay the heavy taxes, in due proportion to his circumstances, which are mainly imposed from the existence of that very debt—the interest thereof swallowing up the larger portion of the States' income. Yet, after due deliberation, and obtaining a clear and unprejudiced view of the question upon all its bearings, that "great fact" does not seem to be incapable of demonstration.

There can be no doubt it is a spur to industry, which aided by the necessities pressing on individual condition, urges every one—not entirely independent of the labour of the head or hand,—to push heart and soul, for its realization in his own case,—and thus the nation becomes rich—and besides, this very effect serves to keep the devil out of the turbulent portion of the community; at least, all who are incessantly employed in promoting their own interests. Touch this spring, and you have the vibratory answer—that every man, let him be in political penchant—Radical, Republican, or Chartist—who has money in the funds, has an interest at stake in the event of revolution, and therefore, he feels the necessity—taking it as a selfish principle—for internal peace and tranquility. The Savings Bank has a similar though minor influence on great masses of persons.

To return to the adventurers—when they arrived at one of the sources of action, with the spirit that belongs to their race, they began to quarrel for precedence; and had not the men-of-war interfered, it is not improbable but that the whole of the "precious stuff" would have been shovelled into David Jones' Locker, instead of the holds of the ships, out of sheer spite to one another. At length, however, the heaps were cleared, and an old face presented to the favours of the sun and the wind, which had long—probably for centuries, been veiled from light and from air.

What the depositors of the "treasure" thought—if they have it—of these doings, I leave to the physiologist to guess; but we may suppose, if they are not for ever scared away from their haunts by the polite be-

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haviour of the "lords of the creation," they will begin, *de novo*, to manufacture, *ammonia*, and deposit it for their use, between the date of their clearance, and a thousand years to come, unless the world should be at an end before that period arrives.

The first arrivals at home created something like a triumph for a time; and no doubt the adventure proved a good spec; the cultivators of the soil were in ecstacy. But John Bull is a whimsical and ungrateful creature; he no sooner applied the new saline stimulent to his crops, than he began to abuse it as a cause certain—"od rot it"—of the "disease" as it was called, which shortly afterwards appeared among his "taters."

This very natural effect of time seemed to puzzle every body—some went so far as to consider the fact as judgment of Heaven for our sins, and Pat had to bear the heaviest load! The most obvious reason for the failure of the potato crops, and which is both simple and probable, failed to present itself to the thoughts of all who in their wisdom essayed to determine the cause. Even the philosophers of nature appear to have overlooked the very natural consequence which has followed the universal indolent mode of culture.

It is well known that the cultivators of the potato have been in the practice of planting the excrescent appendage of the root denominated a *tuber*, in which the *reproductive* principle appears to be limited, instead of occasionally sowing the *seed*, wherein exists the *perpetuating* principle of the plant.

This explanation may be readily admitted if we examine the Jerusalem artichoke, which produces a *tuber*, but neither flower nor *seed;* in it therefore, this tuber constitutes its *perpetuating* principle, which is not the case in the potato or the tulip and others of the flowering tuberous and bulbous plants. Amateurs planted the *seed* of the potato merely to obtain new varieties, and that is the reason why we still have a few sorts (principally of the early kind) worth eating. It will not do to plant the seed of the deteriorated plant now. The obtaining seed from the wild potato in its native habitat is advisable, not from the plants of the coast, for there the Peruvians, &c., have been following the same negligent plan of culture that we have, and the seed obtained from them have not produced sound tubers.

Some writers have laid the blame on a new sort of aphis, which was called *Vastator*; but as the failure has been *universal*, that seems to be obviously incorrect; besides, the province of those insects is to consume decaying vegetables, and not those which are living, unless deprived of the former. A physician considered it a *disease* in the potato, and therefore, made up a prescription to doctor it into good health. This was natural enough—"every one to his calling." I have been a potato grower, and that circumstance may serve as my excuse for touching on the subject here.

To return to our theme. I do not know whether the voyagers paid so many bars of goods for so many tons of guano, to the black king of the coast of Africa, who claimed the islands on which it was deposited, or helped themselves without leave or acknowledgment. But, having swept those lands clean, adventurers pushed on to the southern end of

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America, and astonished the penguins and the giants of Patagonia with their prying inquisitiveness. What to think of the gathering, neither bipeds perhaps could very well determine; but it is more than probable they were greatly alarmed. No doubt the sagacious penguins when they saw such an influx of strange objects, and heard the unusual clatter of voices which the perverse tides caused, from their natural instinct dropped quietly out of the way of the *genus* that had invaded their hitherto peaceful domain, and took shelter among the Fuegian tribe of dappers.

As to the equestrians, we may take it for granted that, they were in a "great stew," which their guanico skin dress was not likely to mitigate, that is to say, whilst the uncertainty of the object of the strangers was unrelieved by action. On finding however, that the noisy multitude were only helping themselves to an article of which they themselves stood not in need, they no doubt became pacified. Yet it is probable that in their councils, they could not divine what on earth the pale-faces wanted with the dung of birds. On the first alarm, it is equally probable that the first thought of their mind was, that the motive of the strangers was to rob them of their lands; a decision however, which, on this occasion proved unfounded.

What a universal disturber is the white man! There is no land—nay, no sea—that is free from his presence; he peers into the deep recesses of the silent and gloomy forests of continents—into the cold sunless and ice-bound waters of polar regions; his cupidity and his curiosity are alike unbounded; he seems never to be satisfied—not content with the moderate share of the bounty which Providence has given alike to all of the human species, *he* craves the whole for himself—and in the plenitude of his enlarged desire, realizes the poet's hit at his insufferable self-importance, in the exclamation:

"The world, the world was made for me!"

To the stately forests which shade this wild land from the vivifying but scanty rays of old Sol, we cannot strictly apply the epithet primeval; and equally erroneous would it be to speak of the first growth of the original progenitors as being "as old as the creation"; nor, perhaps, though moderating our propensity for exaggeration, to say coeval with the appearance of man, even though the existence of land here was anticedent to the deluge.

Trees although living to a great age, have a limit assigned to that age; nature being provident in the succession, and moreover, adapting the plants, from the most stately to the under-growth, to the clime, the soil, the sunny exposure and the shade, in which these are to grow and flourish. In Texas, one of our roving botanists discovered a beautiful flower (*Lisianthus Russellianus*) in a position where the sun's rays never reached! The colour is deep purple, without any appearance of fading from the absence of strong light; a circumstance in itself curious enough; but all dark coloured substances absorb light and caloric in a greater degree than pale shades. Here then is compensation admirably sustained. But among the apparent mysteries which are presented to

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our contemplation, none, perhaps, are more striking to a thoughtful mind, than the universal changes which appear to have been going on from the remotest era to the present time. Permanency is a mere relative term which we conveniently use to express indefinite time; we may therefore predict that change will one day or other take place in Patagonia.

The world is comparatively old according to computation without reference to physical facts—that is, if we put it in juxta position with the age man is now permitted to attain. Truth is slowly received by the mind—that is, confirmed without the reservation of doubt; but, how many false assumptions are advanced as truths and pass-current because, these are wished to be such, or taken for granted from sheer indifference? Sophistry gives her artistic touches, and subtile argument varnishes the whole to give the semblance of sterling worth! The nineteenth century has shown the wonderful expansion of the human intellect, and things are said and done which startle the dull and uninventive among the world's denizens. The political philosophy of America lags not behind that of Europe; here we give one of its fertile deductions "The red man is gone, and the white man is in his place. Such are the mutations of the world! Shall we lament then? No, it is the will and the work of Him that made all, governs all, disposes all, and it is all for the best, or chance is Providence, and Providence is chance." What a comfortable reflection to the free will and responsibility of man! How coolly and confidently the "creature" pronounces on the Providence of the Omnipotent, and measures by the standard of human finite reason, the action of the infinite will! To me the subject in one sense appears a mystery—in another, as man is endowed with free will, the case is plain enough, and if he is accountable for his actions (of which perhaps few or none will dispute) then I think there will appear a heavy weight of sin upon him in these matters—but the dread of "Apolyon," sits not upon his conscience thereon.

Palliatives are ever at hand. The *white man sees* in the mysterious effects which his own actions create, the hand of Providence. Upon this plea he excuses all the acts of spoliation and injustice which he has committed toward the savage whom he has dispossessed, and justifies himself by boldly assuming that savages have *no right* to more lands than they can occupy; a new political opiate very accommodating in the hands of state physicans.

In the red man, east of the Mississipi, what recollections of the past, stamped by tradition, but must harrow up his soul with the bitterest impressions. Memory can paint nothing in these which to him seems not an evil. It cannot magnify the truth. *He sees* his race dwindled to a definite few; and these few yearly becoming less. *He sees* his "white brother" lord of, within a few fractions, the entire lands of the indigenous tribes, and calculates with certainty the melancholy fate that awaits the remnant, and to whose share does *he* charge the consummation, to the "Great Spirit," or to the European "brother"?

Abstractedly colonization is not en evil; it is the injustice of the supplanters of the native races; the general neglect, in the past, of their

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interests that has made it a disgrace to the civilized. How could the new doctrine work in Patagonia? What equivalent could be given to a people who, like the Arabs, are *nomade* equestrians; a surface sufficient to accommodate the whole, after the European fashion, would never satisfy them whilst their wandering habit remained. Supposing the country worth colonising, who claims it? The Buenozarians, Montevedians, or Chileans?

Apply the new principle to Ireland, where there are millions of acres unoccupied, if it be just in the one case, why not in the other? Ha! the Irish have representatives! This long digression the reader perhaps will excuse, as it leads to the close of our sketch. I do not know how the "score" stood with the underwriters, those excellent adepts at the game of "probabilities," but report told of many of the craft finding a setting place under water, a speculation, it may be, just as profitable as if the cargoes of guano these might not have been equal to carry had been landed at the docks at home. By the way, it is a curious coincidence that the Welch who were not of yore a famed people for maritime traffic, should have had two of their proper names thrust upon the most deceptive things pertaining to it. "David Jones" personifies the Ocean, and "Lloyd's," the craft of underwriters! Thus gracing (if I may courteously so say) two of the most wonderful and uncertain things in the physical and moral world.

The skippers, no doubt, had their patience put to the test, and the desire for precedence unbounded. How the facts fared in the vicinity of such an anti-gastronomic locate as port *Famine* I never heard.

Is there nothing more profitable than *guano* to be had in Patagonia? There are plenty of giant trees; and timber for ship-building is valuable in England; have they been examined? The voyage is a much shorter one than that to New Zealand.

STORMY JACK.

ARCTIC INFORMATION.

AMONG our notes of Arctic matters, we have now two documents to preserve, curiosities in their way almost as valuable as those of a literary caste by Mr. D'Israeli. The first is a statement of certain grave objections to the progress of Lieutenant Pim, whose departure we noticed in our December number, and the second is the proposal of a gentleman to take a *solitary* steamer through Bhering Straits by the *Pacific* and search for Sir John Franklin's ships to the north-east. We have heard of another proposal of a gentleman named Petermann, to make a *winter* voyage to the Arctic Sea, into which he would find his way between Spitzbergen and Nova Zemla, in spite of darkness and icebergs, so as to be ready to commence a search in earnest for Sir John Franklin among the Parry Islands in the following summer! We say "earnest," for it might be doubted whether any one could seriously entertain the idea of

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ships wantonly contending with ice in gales of wind *during darkness*, were it not that he recommends to the consideration of the "*authorities*," whether the same Mr. Beatson to whom we have alluded, should not make his voyage by this route instead of that by Behring Strait. Verily this is putting one's gravity to a severe test; but the really serious character of the object in view, enables us to say it is well meant. Save us from such counsellors. No, the proper way to find Sir John Franklin's ships, if Captain Austin's and Captain Ommaney's opinions are to be set aside, is to follow them from one stopping place to another, *through* the Wellington Channel, in which we know they have been;—but so to follow them, and by such a well concerted plan, as to *secure retreat when necessary;* and not to lose more ships and lives in seeking them, as such expeditions as those of Mr. Beatson and Mr. Petermann would do. But here are the documents to which we have alluded.

"The statement of the Imperial Government alluded to in his Excellency's letter commences with a notice of the lively interest which the Emperor has not ceased to take in the generous efforts made by the British Government to discover traces of the Franklin expedition, as evinced by the co-operation of His Imperial Majesty; distinct orders having been given to his officers and people on the coasts of Asia and America, to assist in every way the British explorers, while instructions have been given to obtain any information of shipwrecks on the northern shores of Siberia. The report then proceeds:—

"With similar sentiments of sympathy, the Emperor heard of the expedition proposed by Lieutenant Pim, of the British Navy. But, unfortunately, between the conception of such a project and its realization physical difficulties and insurmountable obstacles exist, which Mr. Pim, guided by his generous devotion, does not seem to have sufficiently foreseen, and concerning which it is the duty of the Russian Government to enlighten him.

"It is easy to trace in the map of the world, across the immense wilderness of Northern Siberia, an itinerary which might lead to the end desired to be reached by Lieutenant Pim; but, in executing such a project it must not be forgotten that, in addition to the enormous distances to be traversed, vast deserts must also be passed over, which, buried under eternal snows, offer neither means of transport nor provisions,—unexplored regions, in which tribes of savage people are scattered at wide intervals,—people over whom the Russian power exercises only the slightest influence, and whose warlike character, barbarous customs, and hatred of strangers are such, that the Imperial Government would find it impossible to guarantee the personal security of Lieutenant Pim and his party.

"To give an idea of the difficulties that such a journey presents, it is well to call to mind the expedition undertaken some years ago by Admiral Wrangel. Prepared during two preceding years by the local authorities, this expedition, though undertaken on a scale of research much less extensive than that now contemplated, had to be diminished in consequence of a disease among the dogs employed to drag the sledges, and yet fifty sledges and 600 dogs were required.

"From this example, it is easy to judge of the fate which would attend Mr. Pim and his companions in the endeavour to execute a jour-

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ney almost treble the extent of that accomplished by Admiral Wrangel, and in which the British officer, having to be accompanied by interpreters, must be provided with more considerable means of transport.

"To define more precisely the nature of these difficulties, and to establish the basis of an approximate estimate, it is sufficient to remember, that as Admiral Wrangel was compelled to employ fifty sledges and 600 dogs (each sledge being supplied with from fifty to seventy salt herrings per diem), Lieutenant Pim's expedition would call for from 1,200 to 1,500 dogs, and provisions in proportion. Now, these animals are only kept in sufficient number for the use of the inhabitants, and it is doubtful if it would be possible to collect such a quantity of dogs, even if the complete ruin of the natives, which must ensue, were entirely put out of the question.

"As to the idea of setting on foot such a journey at present, and without having made the necessary preparations, the Imperial Government does not hesitate to view it as physically ('*materiellement*') impossible."

After some observations upon the improbability of the expedition of Franklin having been shipwrecked in the glacial sea to the north of Siberia, without some information of the event having been conveyed to the Imperial authorities by the natives, the report concludes by stating that the Imperial government, having it at heart to *neglect nothing* which might contribute to the work of humanity which the British Government has followed up with so much perseverance, seizes the opportunity of proposing to Lieutenant Pim to have further communications with M. Baer and M. Middendorff, in order that any ulterior measures may be indicated by which tidings may be obtained of the missing expedition. The next equally extraordinary document is the letter from Mr. Beatson as follows, addressed to the president of the Geographical Society:—

36, *Moorgate street, Jan.* 12*th*, 1852.

"The subject of search for Sir John Franklin having been so frequently discussed by the members of this scientific society, and others well acquainted with the navigation of the Polar regions, I think it would be presumptuous in me to attempt an explanation of my reasons for commencing the search from the north-west of Behring Straits. I believe that many are of opinion that a high northern latitude may be reached through the open water seen by Wrangel, and that subsequently an eastern passage may be forced by a screw steamer. I may, however, be permitted to mention that this is no hasty idea of mine, but one which I have had in contemplation for above two years. On my arrival from Africa at the close of 1849, after the return of Sir James Ross, I began to think seriously of the probable causes of Sir John Franklin's detention, and while in Russia last winter, in speaking upon the subject with some officers of the Imperial navy who had been in the Arctic Seas, I found that their opinions were exactly the same as mine, namely, that Sir John would pass to the northward of the Parry Islands, and never think of turning back till in the meridian of Behring Straits. They were also of opinion that when he arrived thus far he would be prevented getting to the southward by a chain of islands extending far to the westward, a continuation, in fact, of the Parry Islands. Supposing, now, Franklin to have succeeded in getting so far to the westward, and being

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stopped there, it cannot be imagined that he would relinquish the attempt to get through this last barrier to all his hopes, and the realization of the passage into the Pacific, to retrace his steps from a point which may have taken four years to reach. What would a brave man do in such a case? Certainly not to retreat in two or even three years, particularly if, as we hope, they have met with sufficient animal food to support them. I believe Sir John Franklin to be somewhere to the north of Behring Straits, and certainly not far to the eastward; and in that belief I wrote to Lady Franklin, in October last, stating my plan, and soliciting her assistance, which, I am happy to say, was immediately given. I have since then exerted myself in selecting a suitable vessel, which I have purchased, and which is now in dock undergoing the necessary alterations. She is a schooner of nearly 200 tons, but capable of carrying a much larger quantity. I intend fitting her with three separate engines of eight-horse power each, with separate boilers, by which arrangement I can effect an immense saving of fuel by only working one or more engines, as circumstances may require. In addition to this, I take a steam launch, with an engine of five-horse power. My crew will consist of only fifteen men and myself. I shall, by a careful selection of provisions, be enabled to take enough for five years. The whole of these arrangements I expect to have completed and be able to leave England by the end of next month, and to proceed direct to the Sandwich Islands, whence, having filled up with coal, &c., to push on for the Straits, which I hope to be able to enter by the middle or latter end of July. When there, of course I must be guided by the condition of the ice. If there is a possibility of getting to the north, on or about the meridian of the Straits, I shall do so; otherwise, I intend pushing my way to the north-west till I arrive at the open water seen by Wrangel, when, perhaps, I may be able to get to the north and then to the east. Should I not succeed in getting so far along the coast this year, I might employ the spring (before the breaking up of the ice) in an attempt to reach that land seen by Captain Kellet from Herald Island, and thus be enabled to perform one part of the scheme proposed by Lieutenant Pim. I would next in the spring push away to the north and east, in which direction I believe I shall eventually find some traces of our missing ships. I consider it would have been desirable (and, in fact, it was my first intention) to have had another small screw steamer as a tender, and of far greater power. I am sorry to say that I am not able to accomplish this, but am, nevertheless, determined to go in the best way I can." I am, &c., DONALD BEATSON.

Although Mr. Beatson cannot command success, he certainly well deserves it for his bold and unprecedented project. But we must now make room for the following despatch from Captain Wellesly of the *Dædalus*.

Official report of H.M.S. Dædalus's visit to H.M.S. Plover, in Behring's Strait.

H.M.S. Dædalus, San Francisco, October 27th, 1851.

SIR.—I have the honour to report to you the proceedings of her Majesty's ship under my command since my last communication from the Sandwich Islands on the 24th of May, and in so doing I regret not to be the bearer of any news regarding the missing expedition.

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We quitted the harbour of Honolulu on the 25th of May, and hove to outside the port until dusk, in order to await, to the last moment, the arrival of any vessel with further orders, then bore up, and passed between Oahu and Atooai, as in consequence of the excellent passage made last year by the *Investigator*, by pursuing a direct course through the Straits of Amouckta, I determined to follow the same route, and our own passage having occupied the same time, though several weeks earlier in the year, I think it may be recommended for speed, as it certainly may be for security.

We reached within sixty miles of Amouckta on the 12th of June, in very thick weather, and having had no observations for some preceding days, we rounded to till the next day, when having ascertained our position, we steered through the channel to the westward of Amouckta, without seeing land, passed to the westward, and in sight of St. Paul's and Sea Otter Islands on the 15th, and stood in to the south-west point of St. Lawrence Island on the 18th, having carried a fair wind since passing the Aleutian Group, and our passage thus far having only occupied twenty-four days.

Here we boarded the French whale-ship *Ajax*, of Bordeaux, who gave us information that the ice extended across the Bay of Anadir from Cape Thaddeus to Cape Tchaplin, and thence across St. Lawrence Island, and that, finding it impossible to get to the northward, she was going to pass to the southward of the island, in hopes of finding clear water to the eastward.

I am sorry to add that, in endeavouring to do this, while approaching too close to the shore in search for whales, this vessel struck, and was lost on a reef off the south-east side of St. Lawrence Island a few days afterwards. The *Ajax* had fallen in with H.M.S. *Enterprize*, on the 1st of June, in long. 176 west, at the edge of the ice, which at this period appears to have extended across from Cape Thaddeus (Asiatic Coast), to Cape Roumanzoff, on the American Coast.

On the 19th we sighted the ice, and found cruizing off the edge of it several whale-ships, awaiting for an opening to proceed northwards. We were detained off the north-west point of St. Lawrence Island till the 24th, when, having anchored with the stream, near it, we were closely beset with the ice, which extended in every direction as far as the eye could reach, and left us no alternative but to remain at anchor to avoid being drifted near the shore. On the 27th, the northern shore of the island being partially cleared of ice, and the ship free, we weighed, and stood to the eastward, in the hope of finding a clear passage in that direction. We succeeded, however, in getting but a few miles, and from this period to the 9th of July, we were almost constantly beset with ice, the only clear water being occasionally close in the shore, where we were forced to remain at anchor, sustaining a heavy pressure of ice against the bows, from the strength of the tide, which made the ship drive; and it was generally found better to weigh on these occasions, and, having no ice anchors, to secure the ship with warps, and the boats' anchors to the largest floes of ice, and in this manner we gained some miles to the eastward. On one occasion we made sail, and drove the ship through the ice into clear water; but the thumps and shakes she received were so great that I should not have attempted it again but as a last resource.

On the 5th, whilst at anchor, the weather being very thick, a field of

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ice, above a mile long and half-a-mile broad, was set across the ship's bows, and the ship, unable to withstand such a pressure, drove, our efforts to break it by degrees, by the use of our spare mizen-topmast, as a bumper, and axes and pickaxes, being quite ineffectual. A heavy jerk about midnight, and the ice passing on clear of the ship, showed that something had given way; and next morning, finding the ship again driving we sighted our anchor, and found both flukes gone, the shank having broken in half about a foot from the crown. The part that came up, as well as the cable, was quite bright, but so great was the strain, that I should have been surprised if neither anchor nor cable had given way.

It is worth remarking that on the 12th of August, or thirty-four days afterwards, we picked up the buoy of this anchor (which was a wooden temporary one we had made to save our new buoys whilst among the ice) lying on the north beach on the shore of Port Clarence. It was about fifty feet from the water's edge, and about twenty feet further up than the ordinary high water mark, and had no doubt been drifted up on the 8th, when the tide rose unusually high in the south-east gale which blew on that day. The distance from where it was lost was about 145 miles, which would give only about four miles and a quarter a day to the northward; but part of this time the sea was almost filled with ice, and the wind prevailed more than usual from the northward. It may be considered, however, as confirming the supposition that all the large quantity of drift wood in this vicinity, and in the midst of which the buoy was found, comes from the southward.

The wreck of the American whaler *Mary Mitchell*, lost about the same time on the west side of St. Lawrence Island, drifted also to the northward and through Behring Straits, and was fallen in with by the English schooner *Eliza*, of Hobart Town, in August, to the N.W. of East Cape.

In the course of the 6th we weighed, and soon after, securing the ship to the field of ice above mentioned, drifted with it ten miles further to the eastward. Finally, we observed on the 9th clear water to the northward, and shortly after had the pleasure once more of making sail, after three weeks being obstructed and almost constantly beset with ice.

We were not, however, able to reach King's Island, as the pack extended thirty miles to the westward of it in a nearly north and south direction, and had the weather not been so very thick on standing over to the Asiatic coast, I should have gone into St. Lawrence Bay, but the fogs were so thick we could scarcely see a ship's length. On the 15th we found the ice had cleared away, and succeeded in anchoring in Port Clarence, when I found that the *Enterprize* had sailed on the 10th on her Arctic service, and that the *Plover* had proceeded on the 11th to Norton Sound, leaving her decked boat in Grantley Harbour, in charge of the storehouse. I, therefore, took advantage of the fine weather to get our topmasts down and refit our rigging, and had the bows caulked, the pitch having been forced out, and some copper rubbed off by the ice, which caused a trifling leakage.

On the 30th of July the *Plover* arrived, and I sent the carpenter and a carpenter's mate of the ship aboard to examine into her condition and report on her defects, and I have the honour to enclose herewith (No. 1) a copy of their report, from which it is evident that in their judgment the vessel is quite fit to continue the service she was employed in for

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the period she is ordered to remain. Commander Moore had instructions from Captain Collinson to proceed to Hong-Kong in case no man-of-war arrived during the summer, in consequence, I imagine, of the *Plover's* crew having suffered much from scurvy in the past winter.

He had also a discretionary order to proceed previously to the northward of Behring Straits for a short period, if he thought it likely to be of any service in gaining information; and as he was anxious to do so I delayed the repair of his defects, and supplying him with store and provisions till his return, and I proceeded in this ship in company with the *Plover* to St Lawrence Bay on the 2nd of August, to ascertain if any despatches had been buried on the island there, in the position pointed out by Captain Collinson in his letter to the Admiralty last year. We had parted company in very thick weather, and on the 4th, on entering the bay, we observed the *Plover* also running in while we were communicating with an English lorcha from Hong-Kong, out of which vessel we took a bag of letters for the *Enterprize*.

The *Plover* meantime had anchored inside the harbour, which is formed by a low sandy islet, on the northern shore.

We had neither chart nor sailing directions, but as I understood that the passage was safe on either side of the islet, we steered for the eastern one, but the water shoaling very quickly the best bower anchor was let go in four fathoms and a half, sail shortened, and on bringing up the ship swung into three fathoms, and touched very lightly a few times, owing to a slight swell that was setting in.

Shortening in cable and laying out the stream anchor, we hove her into deeper water immediately, without a possibility of her having received the slightest damage, and then entering by the western channel we anchored in the harbour, where we found several whale ships, principally under English and American colours.

No despatches having been found, I quite agreed with Commander Moore, that although there was very little probability of his either seeing or obtaining any intelligence of the *Enterprize*, or hearing of the position in which the *Investigator* had passed the last winter, it would be satisfactory that I should be able on my return to carry information as to the state of the ice to the northward, as the unusual time to which the sea to the southward has been filled with ice would render it probable that the packed ice would be found much further to the southward of its position than in the previous years.

To assist in working the *Plover* I sent from this ship Mr. Buckley, acting mate, and Mr. Scott, second master, with ten seamen (with whose conduct and exertions Commander Moore, on his return, expressed himself as much pleased), and on the 9th of August the two vessels sailed together, the *Dædalus* anchoring in Port Clarence the following day.

On the 28th the *Plover* returned, having reached only 70° 30′ north latitude, where he found the pack, being 160 miles further south than last year. He, therefore, visited Kotzebue Sound, ascertained that the cache of provisions was untouched, and made the best of his way back to Port Clarence. We immediately commenced caulking and repairing her defects, which, with the exception of replacing some copper rubbed off under water, was completed by the 6th of September, and on the 9th she moved into Grantley Harbour to prepare for passing the winter.

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I have completed the *Plover* with stores, provisions, clothing and fuel, to December, 1853, as per statement No. 2, with the exception only of some preserved soups and vegetables, and a few medicines, with a few trifling stores, none of which we had on board; and in addition I have left in her charge a supply of six months' provisions and warm clothing for sixty men, calculating that if either crews of the *Enterprize* or *Investigator* should fall back in boats they would be victualled during the winter, without encroaching on the *Plover's* own stock, and in the summer the *Plover* will have no difficulty in falling in with whalers about the straits, any of whom would carry the crews to the Sandwich Islands or elsewhere.

In compliance with the third paragraph of your orders, I have replaced all the officers and men of the *Plover* who either were desirous of quitting the Arctic Regions, or were not considered, after another most careful medical examination (a previous one having been already held by Captain Collinson's orders in July), equal to passing two more winters there.

To the former I gave the option to volunteer for this ship, any petty officers for whom no vacancies might exist being borne as supernumeraries for your disposal. I have the honour to enclose (No. 3), a general statement of all charges made, with the reasons against each name; also the documents connected with the medical surveys held on the *Plover's* crew, and the volunteers from this ship for the *Plover*. To supply their places, amounting to twenty-three, an equal number have been sent from this ship, and, in addition, I appointed Mr. Gordon acting mate, and a steward, at the request of Commander Moore, making her complement hold forty-one exclusive of the interpreters; the seamen and marines selected by lot from a large number of volunteers, and all of them men of excellent character. Lieutenant Vernon, of this ship, who replaced Lieutenant Cooper, is a most excellent, trustworthy officer, as is also Mr. Foster, assistant-surgeon, whom I sent to the *Plover*, to supersede Dr. Simpson (*b*), surgeon, in accordance with the Admiralty circular, No. 17, dated July 3rd, 1846, and whom I received on board for a passage to England; and I have given Mr. Chads, acting mate, an order to act as lieutenant, vice Vernon.

With the exception, therefore, of some few medicines and preserved soups and vegetables (and to make up for the latter article this year a supply of excellent potatoes was purchased from an English schooner which visited Port Clarence), I consider the *Plover* is, as far as possible, in a condition to fulfil their lordships' instructions. I should have quitted the *Plover* with more satisfaction could I have felt myself justified in replacing Commander Moore, and every one of the *Plover's* crew, even without their consent. They all either left England in the *Plover* and have therefore already passed three winters in the Arctic regions, or have served in the *Herald* since 1845, and desirous as they were to remain at their posts as long as their bodily strength permitted them, and at present there is no such impediment, I did not feel myself authorised to act contrary to their wishes, although it is impossible not to be anxious at leaving them for two more winters, and looking forward to the possible effect upon their health which the monotonous nature of such a lengthened service produces in depressing the spirits. Having, however, made a fair offer to all of retiring, coupled, as I felt I might

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do, with an expression to them of my conviction that no discredit could by any possibility attach to their accepting it, I did not feel it right to take any other step.

Judging from last year's supply of venison (6,000lbs), and several thousand head of ptarmigan, besides fish, a fair supply of fresh provisions may be reasonably anticipated this winter, although the Esquimaux have obtained such a large supply of their favourite articles of barter from the whale ships during the summer, they may not exert themselves so much in order to procure them for the *Plover*.

During our stay at Port Clarence I received an urgent request, a copy of which I have the honor to enclose (No. 6.) from the master of the English schooner *Eliza*, of Hobart Town, of which Mr. John Johnson, of New Wharf, Hobart Town, is owner, to remove John Thomas, second mate, from his vessel, and having personally assured myself of the truth of his statement, I received him on board this ship, to be sent on shore at the first convenient opportunity.

From what I was able to collect from the different whaling ships we fell in with, I imagine that the past season has proved so unfavourable that not many will be tempted to try Behring Straits next year. Very few whales have been taken, and in addition to extensive injury from the ice, which, owing to its being so far south, many attempted to force their way through, but unsuccessfully, several have been totally lost.

We found Port Clarence a most excellent harbour; abundance of water, and wood, easily procured, and our seine net, used once a week, provided enough for a day for the whole ship's company.

The winds were generally moderate, the holding ground excellent, and had it been necessary for the ship to remain for the winter, although it is very doubtful if we could get her into Grantley Harbour, there is a position near Cape Riley, where she would no doubt have been perfectly secure. Grantley Harbour has proved quite secure as a winter quarter for the *Plover*, and the shore abounds in summer with wild onions and berries, excellent antiscorbutics. In the belief that Commander Moore has transmitted to you a report of proceedings during the past winter, as also an account of the distressing murder of Lieutenant Barnard, of the *Enterprize*, at Darabin, I do not allude to these subjects. I am sorry to say that an unfortunate affray between some natives, some where near Cape Chaplain, and the crews of some whalers, occurred this summer.

The dispute seems to have originated in the endeavour of the natives to obtain possession by force of some property on board a whaler which was wrecked there, and ended by the loss of some lives on both sides.

The arrangements with regard to the *Plover* were completed before the last week in September, but as it was probable that, in the event of the *Enterprize* not finding it practicable to reach Point Barrow, she would be obliged to return to Port Clarence, in which case she might be expected to arrive before the end of September, I delayed our departure till the 1st of October, when we put to sea with a fine northerly wind, which carried us past St. Lawrence Island, and on the 7th we passed through the Straits of Amouckta, thence we steered a direct course, and arrived at this port on the 22nd instant. After a few days' stay I shall proceed to sea for the purpose of carrying out the remainder of your orders, *en route* to Valparaiso. I have, &c., GEO. G. WELLESLEY.

To Rear Admiral F. Moresby, C.B., &c., Commander-in-Chief.

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Destruction of the Royal Mail New Steamer "Amazon," and Loss of 115 Lives.

The catastrophe which befel the Royal Mail Steam Packet *Amazon*, she being destroyed by fire on the night of Saturday, January 3rd, has created a deep feeling of sorrow and regret, not only in Southampton, her port of departure, but universally in the public mind, from the fearful loss of life, and the terrible nature of the deaths of the gallant commander, his officers and crew, and the unhappy passengers.

The distressing intelligence was brought to Plymouth on the midnight of Monday, by the brig *Marsden*, Captain Evans, bound from South Carolina to Cardiff, which ship also brought the only supposed survivors, twenty-one in number, of the 161 souls that left Southampton in the *Amazon*. On Thursday night an electric despatch was received in Southampton stating that twenty-five more lives, including those of six passengers, had been saved; having been picked up by a Dutch vessel and taken into Brest, from whence the intelligence was telegraphed to Paris, and thence to London, and so to Southampton. The account is correct, but our narrative necessarily stands as first written.

The *Amazon* left Southampton at half-past three o'clock on Friday afternoon, and in the Channel experienced strong head winds and rain. At a quarter before one on Sunday morning, when the ship was about 110 miles W.S.W. of Scilly, a fire broke out suddenly, forward on the starboard side, between the steam chest and the under part of the galley, and shortly after the flames rushed up the gangway which is in front of the foremost funnel. The alarm-bell was rung, and Captain Symons rushed on deck in his shirt, and trowers. Wet swabs and other loose things were placed on the gratings of the spar-deck hatch, and a hose was brought to play on the main deck, but quickly abandoned in consequence of the excessive heat. The deck pump was also kept at work until the men were forced to retire. The wind was blowing half a gale from the south-west, and the vessel was going eight and a half knots, which was her average rate from the time of departure. Captain Symons ordered some hay, between the engine-room crank gratings, to be thrown over-board; two trusses were hove over the ship's side, but the fire soon ignited the main body, the hencoops on each side, and the paddleboxes; the men were obliged to abandon the deck, and those who could leave were all finally driven from the ship.

The first boat that was lowered was the mail boat. She was immediately filled with people and went astern, when she was swamped, with twenty-four or twenty-five passengers in her, all of whom were drowned. The next boat that was lowered was the first cutter. There was not many in her; and when they unhooked her after tackle, she sheared across the sea, and the people were immediately washed out, the boat still remaining hanging by the bow. The next boat lowered was the second cutter. In attempting to lower her, the sea raised her fore-end and unhooked her, and she immediately fell perpendicularly, and all, except two, were jerked into the sea, and these clung to the thwarts. It is not known what became of them. Some of the men succeeded in lowering the life boat with fourteen of the crew in her, and two passengers. At the same time as that boat was lowered, Mr. Vincent, the midshipman, Mr. J. Williamson, the steward, two able seamen, and Mr. Silsey, a passenger, succeeded in lowering the dingy and got into the life-boat. The captain during all this time, was

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actively engaged in endeavouring to get the fire under, which was burning most furiously, and soon after the men got into the boat it came on to blow a gale of wind, the sea at the time being very heavy. Another life boat, as observed, must have saved twenty-five more lives.

The loss of life, the swamping of the boats, and all the other horrors of this afflicting event are too easily accounted for. The position of the fire rendered it impossible to get at the engines, in order to stop them. When the ship's head was to windward the flames swept the after decks, where the passengers chiefly were. Before the wind, she was going at a tremendous speed, and it is marvellous how any of the boats were launched under such circumstances and in such a sea. The escape of the little dingy is no doubt due to the calmness and intrepidity of young Mr. Vincent, who, though a mere boy in years, proved himself a thorough man and sailor on the occasion. He not only guided his small boat in safety till he joined the life boat, but there he took immediate command as superior officer and did everything in his power to sustain the courage of the crew throughout that dreadful night. The following written statement was laid by him before the Directors of the Company :—

"The *Amazon* was at noon of the 3rd of January, 1852, in lat. 49° 12′ N., and long. 4° 57′ W., from which time she steered W.b.S. ½ S., till 9h. 30m. P.M. of the same day, when she was stopped to cool the bearings. At 11h. 30m. P.M. she proceeded, still steering the same course, steaming about eight and a half knots per hour, wind and sea increasing from the windward. At 40 minutes A.M. on the 4th, smoke was observed coming through the hatchway, on the foreside of the foremost funnel. Immediately afterwards the flames burst through. The alarm was immediately given, and the captain and chief officer came on deck. The fire-hose and buckets of water were brought to play on the fire; but that, together with the attempt to stop the engine was ineffectual. The helm was put hard to starboard to put her before the wind, but it was some time before she payed off. The mail-boat, when lowered, was immediately swamped, with about twenty five people in her, all of whom were lost. The pinnace, when lowered, sheered across the sea before the people in her could unhook the fore-tackle. They were thereby washed out, and the boat remained hanging by the bow. While clearing away the second cutter a sea struck her and raised her off the cranes and unhooked the bow-tackle. The fore-end immediately fell down, and the people in her, with the exception of two, who hung double over the thwarts, were precipated into the sea and drowned. Sixteen men (including two passengers) succeeded in clearing away and lowering the life-boat on the starboard side. They used every endeavour to save those in the water, but were swept past so rapidly that their exertions were without avail. At about the same time I (Mr. Vincent,) with the chief steward, one passengers, and two seamen, got into and lowered the dingy, and were picked up by the life-boat about half an hour afterwards, when we immediately took the small boat in tow, and stood down for the ship, but the wind and sea increasing, and the dingy being upset, and ourselves being nearly swamped, we were obliged to let the small boat go, and keep the life-boat with her head to the sea. Whilst lying-to a bark passed astern of us, and was accordingly hailed, and did, I believe, answer, but did nothing of any kind to assist us, but stood down to leeward of the ship, hauled on a wind, and went away. There was now on our quarter a boat with five men (supposed to be the gig), but we could not from the severity of the weather render her any assistance. About half an hour afterwards we suddenly lost sight of her. About 4 A.M. it rained heavily, wind shifted to the northward, decreasing sea, confused, but going down; put the boat about, and

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kept before it. At five the magazine exploded, and about half an hour afterwards the funnels went over the side, soon after which the ship went down bodily. At noon we were picked up by the *Marsden*, of London, stood in for the coast of France, and afterwards (wind shifting to the southward) for Falmouth, and lastly for Plymouth, at which place we arrived on Monday, 11 P.M.

"48° 5′ N. lat., 5° 30′ W. long., when picked up.

"WILLIAM VINCENT."

"*To the Secretary R.M.S.P. Company,*
Jan. 6th, 1852."

The list of passengers believed to be lost is as follows:—Messrs. De Pass and Delgado; Lieutenant Geylls; Mr. Fellows; and Rev. Mr. and Mrs. Winton, Jamaica; Mr. Best, and servant; Mr. Kilkelly; Messrs. Callender and Stirling; and Mr. Alleyne, Barbados; Mr. Johnston; Mr. Burnett; and Mr. and Mrs. Scotland, Trinidad; Mr. Hick; and Mr. and Mrs. M'Clinnow, Demerara; Mr. Elliott Warburton; Mr. Geraud; M. and Madame Lacombe and child; M. Kersaboe; Mr. Cinna; Mr. Barincose; and Mr. Dellemare, Chagres; Mr. M. Del Rio; Margaret Fitzgerald; M. Fevrier; and Mr. Glennie, Vera Cruz; Miss Smyth, Porto Rico; Mr. Joel, Jamaica; Mr. Cuming, and Mr. Evans, St. Thomas; Mr. Cardennas, Santa Martha; Mr. Blood; Mr. Anthony, and Mr. Hamilton, Jamaica; Mr. Ferrear; Grace Hoar; Mr. Strybro, and Mr. Granier, Vera Cruz; Mr. Crevecowst, St. Thomas; Mr. Le Faye, Guadaloupe.

The passengers saved are—Mr. Hawkes, Vera Cruz; Mr. Neilson, Demerara; Mr. Sisley, Chagres.

The names of the crew believed to be lost are—William Symons, Commander; Henry Roberts, 34, chief officer, Gosport; Charles H. Treweeke, 29, second officer, Illogan; John Lawis, 28, third officer, Kingston, Jamaica; George D. Goodridge, 21, fourth officer, Paignton; James W. Fullerton, surgeon, County Donegal; M. H. Strutt, 33, purser, Middlesex; Francis Stainforth, 16, midshipman, East Indies; William K. Stuart, 15, midshipman, Tallyhog; Thomas Walter Shapcott, 28, purser's assistant, Southampton; David Davis, 40, boatswain, Cardigan; James Murchis, 34, carpenter, Ayr; James Bryant, 26, carpenter's mate and joiner, Downton, Wilts; Joseph Kay, 41, master-at-arms, Bolton; George Deal, 26, quarter-master, Bridport; Alexander King, 33, quarter-master, Fareham; Richard Carter, 20, A.B., Poplar; Peter Kelly, 19, A.B., Aberdeen; Daniel Brown, 27, A.B., Yarmouth; George Webb, 34, A.B., Southampton; Samuel Perry, 20, A.B., Harton; Richard L. Tammadge, 34, A.B., Hilsea; Henry Wright, 28, A.B., Gosport; John M. W. Rogers, 28, A.B., London; Joseph Welsman, 20, A.B., Devonport; William Foy, 21, A.B., Althorpe; Thomas Hart, 33, A.B., Kent; Squire Glen, 34, A.B., Greenock; John Clerk, 39, A.B., Burnham; William Stephenson, 23, A.B., Ayr; James Dove, 36, A.B., Isle of Wight; George Holah, 29, ship's cook, Mile-end; John Forse, 36, officers' servant, Exeter; Richard Harris, 16, dispensary boy, Isle of Wight; William Fox, 17, boy, Falmouth; Daniel Trimming, 18, boy, Kovel; F. S. Wall, 15, boy, Southampton; Charles Leddra, 17, boy, St. Ives; George Angus, 34, chief engineer, Dunbar; William Angus, 32, second engineer, Dunbar; William Bustin, 40, third engineer, Alphington; William Stone, 37, fourth engineer, Ludgoen; Andrew Ferguson, fifth engineer, Greenock; Frederick Davey, 26, sixth engineer, Exeter; Isaac Robarts, 36, boiler maker, Holyhead; John Lamont, 22, fireman, Jersey; Charles Flemington, 29, fireman, Morton; George Reeves, 22, fireman, Brading; Charles Lang, 44, fireman, Alverstoke; Michael Fox, 36, fireman, Blarney; John Fowler, 38, fireman, Old Ford;

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George Harding, 26, fireman, Crayford; Nathan Wigley, 32, fireman, Paul's-Cray; Thomas Attwood, 30, fireman, at sea; Peter M'Kirdy, 33, fireman, Rothsea; John Richards, 29, fireman, Millbrook; Robert Furl, 30, fireman, Portsea; William Pane, 38, fireman, Southampton; William Scott, 29, fireman, Harwich; William Lane, 31, fireman, Lymington; Henry Day, 22, fireman, Walton; George Tucker, 21, coaltrimmer, Portsea; W. Goodman, 32, coaltrimmer, London; Charles Deudney, 25, coaltrimmer, Hastings; W. Lucas, 20, coaltrimmer, Dorsetshire; Henry Carter, 21, coaltrimmer, Southampton; Abraham Bundy, 33, coaltrimmer, Leap; W. Wall, 25, coaltrimmer, Wickham; John Potter, 23, coaltrimmer, Wyle; Samuel Lees, 35, coaltrimmer, Wolverhampton; Thomas Forder, 32, coaltrimmer, Sutton; Angus M'Innes, lamptrimmer, Fortwilliam; W. Norris, 18, engineer's servant, Southampton; Michael Gould, 41, head waiter, Kingsend; W. G. Lambert, 24, waiter, Chatham; W. Adams, 21, waiter, Shirley; John Bance, 20, waiter; Southampton; John Blake, 38, bedroom steward, Hopton; Thomas Philpott, 34, foreroom steward, Ramsgate; Robert Daniel, 23, saloon cook, Bethnel-green; Debray Theophile, 30, French cook, France; Charles Mills, 25, second cook and scullion, Hursley; Joseph Kerley, 36, baker, Southampton; John Watson, 22, boots, Southampton; James E. Stroud, 26, butcher and stock-keeper, Thatcham; Frederick Falkner, 33, storekeeper, Middlesex; E. Scott, 44, stewardess, Banff; George Gerrin, 17, boy, Helin; Thomas James Brown, 18, able seaman, Hants.

Those of the crew saved are—Mr. Vincent, jun. midshipman; Mr. James Williamson, chief steward; Mr. John Dunford, quarter-master; W. Foster; Thomas Carney; James Maylin; James Mowatt; William Stears; J. H; Passmore; H. Williams; William Stevenson; and John Nerink, able seamen; William Nutman, water-tender; James White; John Shearing; and Charles Thorn, firemen; W. Dumner, and George King, trimmers.

The fearful account of life and death, therefore, by the *Amazon* stands thus—

Ship's company - - - - -	110
Admiralty agent - - - - -	1
Passengers - - - - -	50
	161
Saved - - - - - -	21
Missing - - - - - -	140
[Deduct, since known to be saved] -	25
Total lost - - - - - -	115

Of the causes which led to this terrible catastrophe nothing is yet known with certainty. The only conjecture that could at first be hazarded was that which connects with the outbreak of the fire the heated state of the bearings. All new ships suffer more or less in the same way until their engines get into working trim.

As is usual with new machinery, water was kept almost continually playing on the bearings of the engines. On account of the heat of these bearings the ship was stopped off the Bill of Portland on Friday night, between the hours of eight and twelve, and about the same period on Saturday night she was stopped for two hours and a half; however, the necessity for the operation of wetting these parts was decreasing, as the main centre bearings were getting more suent, and the engine altogether in better order. John Shearing, an intelligent fireman, states that in playing the water on the

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cranks a quantity fell on the wood and felt of the boilers, and he conceives that these substances, when the water was dried from them, would ignite the quicker for the operation, and hence the accident.

The boats of the *Amazon* were fitted with iron cranes or crutches, on which their keels rested; these fittings obstructed their clearance from the ship, and but for this fatal arrangement the serious loss of life would have been lessened. Captain Symons ordered no one to get into the boats. This order was obeyed until the people saw the flames overpowering the ship. He was last seen with the man at the wheel, ordering the helm to be put up, so as to keep the ship before the wind. His last words were,—"It is all over with her." The officer of the watch, Mr. Treweeke (second officer), was walking the bridge when the accident was discovered. Mr. Henry Roberts, chief officer, in his shirt only, was actively assisting the captain; he was last seen going through the companion down to the main deck, and is supposed to have perished there. Mr. Lewis, (third officer), Mr. Goodridge (fourth officer), and the two midshipmen, some of whose berths were forward, on the port side of the main deck, were probably suffocated, as were also the chief engineer Mr. George Angus, and Mr. Allen, superintending engineer, under Mr. Seaward, as they were seen in the engine-room ten minutes before the fire broke out going forward, there being no possibility of their return through the flames. The second engineer, Mr. William Angus, was on the spar deck, between the funnel and the crank gratings, pulling oars, and throwing them out of the way of the fire on the deck, near the boats. The two boats were stowed on the top of the sponsons, where the flames prevented approach. After the *Amazon* was put about, she went at the rate of twelve or thirteen knots, dead before the wind. One boat on the starboard-side, the second cutter, was full of people when the wash of the sea unhooked the foremost tackle; she held on by the stern tackle, and her stem falling into the sea, all except two were drowned, in consequence of the ship's speed. The pinnace was observed on the port side, towing by the fore-tackle, behind the burning ship, and as no one cut the tow-rope, the miserable passengers, who were all huddled together, were, one after the other, washed into the sea. The mail-boat, which was also full of people, having shipped a quantity of water, went down alongside.

The scene on deck is described as dreadful in the extreme. When the flames had approached the after companion, two male passengers came up from the saloon, all in flames, and running aft, fell on the deck. A tall lady, supposed to be Mrs. Maclaren, entreated some one to take care of her child, but she would not enter either of the boats. Dineford, the quartermaster, placed one lady passenger in a boat, but she, being extremely agitated, got out again, and although Henry Williams and another used some force and begged her to go in, she persisting in remaining on board. The stewardess, Mrs. Scott, with her bonnet and shawl on, and something in her hand, first asked Steer to put her in the dingy and then left for a larger boat. At the time of leaving some of those who yet lived were kneeling on the deck praying to God for mercy, while others, almost in a state of nudity, were running about screaming with horror.

The survivors escaped in the after starboard second life-boat, in which was Mr. Neilson. One of her occupants (Maylin), in leaving, pressed his foot through the burning deck and injured it; two others (Williams and Passmore) had to climb the starboard paddle-box through the flames and smoke. They succeeded after three attempts, and then slid down hands and face over the paddle-box into the boat; several went down by the tackles. Two of the watch below (Williams and Foster) had their hair burnt while coming on deck. When the life-boat left there were sixteen on board; they

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heard some one shouting in the water, threw over a keg and some oars. They endeavoured to approach, but the sea carried the boat off. They then took Mr. Vincent, Mr, Williamson, Mr. Sisley, and two sailors from the dingy, and, making her fast to the stern, towed after the burning wreck, thinking to save more lives, but the dingy having filled, they were obliged to cut her adrift, and fearing that they themselves should be swamped, their boat's head was put to face the sea. Twelve oars were at work, the wind was increasing, and heavy squalls coming on. They saw the ship's gig full of people, shouting as if for assistance, and at the same time descried a sail standing apparently to the southward. The vessel appeared to pass between the two boats, and after this the gig was not seen; whether she was swamped or was taken up by the stranger is unknown. The strange vessel came pretty close under the life-boat's stern, when all shouted together, and thought they were answered on board; she was a barque, under close reefed top-sails, fore-sail, and fore-top-mast stay-sail; her spanker was hanging in the brails as if she was in the act of vering. Soon after her helm was put up, and she bore right down towards the wreck, behind which she disappeared. The masts of the steamer went over before four o'clock in the morning, the fore-mast on the port and the main-mast on the starboard side. One poor fellow appeared at the jib-boom end; the jib was cut loose, and was blowing away. Her mizen-mast was still standing while she was in flames from stem to stern. About five o'clock, when the life boat was passing the ship in a lee-wardly direction, the gun-powder in her two magazines aft exploded, and in about twenty minutes, the mizen having gone by the board, she made a heavy lurch and went down, her funnels being red hot and still standing.

Mr. Vincent, in his narrative given above, does not mention that when in the dingy his monkey jacket, being mounted on an oar, was their only sail, and the boat was kept dry by bailing her with his boots.

Captain William Symons was a gentleman of known and tried courage and abilities. He was only provisionally appointed to the *Amazon* in consequence of the absence from England of Captain Chapman, of the *Tay*, who was destined to be her permanent commander, the Directors having intended Captain Symons to assume the command of the new steamer *Oronoco*, now in the Thames, and nearly ready to take the station on the main line of the West India mail service. Captain Symons had recently distinguished himself by great bravery in the Isthmus of Panama, where, by his intrepidity and coolness, he prevented the slaughter of a great number of American passengers by the infuriated natives, and where under a heavy fire of cannon and musketry, he succeed in conveying gold dust to the value of upwards of 2,000,000 dollars in the boats of the *Medway* on board the United States' mail steam-ship *Cherokee*; and, further, in rescuing the passengers under circumstances of imminent danger, and placing them safely on board the steamer. Just prior to the sailing of the *Amazon* Captain Symons received the subjoined letter from the United States Mail Steam-ship Company, of New York, accompanied by a magnificent silver speaking trumpet :—

"*Office of the United States' Mail Steam Ship Company,*
New York, November 4th, 1851.

"Sir.—Captain Windle, of the *Cherokee*, one of this Company's steamers, has reported to us the prompt and efficient aid rendered by yourself, and the officers under your command, in the recent affray at Chagres, by which the mails, treasure, and passengers, were promptly and securely placed on board the *Cherokee*.

"I beg you to accept, in behalf of this Company, my best acknowledge-

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ments for this high act of courtesy, characteristic alike of British honour and humanity, and honourable to your flag, yourself, your officers, and men.

"Allow me also the pleasure to tender you the accompanying speaking trumpet, as a slight testimonial of the Company's appreciation of your character and services.

"I am, &c.,

"M. O. ROBERTS."

"*To Captain Symons, commanding the Royal Mail Packet Company's steam-ship Medway.*"

Lieutenant Brady, R.N., the Admiralty agent of the *Amazon*, was sent on board to take charge of the mails at the last moment, in the place of Lieut. Wilkinson, R.N., who was prevented from embarking by a sudden indisposition, and whose life has thus been providentially preserved at the expense, of that of Lieutenant Brady, who was an officer well known and highly respected.

It may be added that all the officers, engineers, and crew of the *Amazon* were picked men, and were selected for appointment to the new ship from their previously known abilities and intelligence.

The value of the *Amazon* when ready for sea was about £100,000, and she is understood to have cost the Royal Mail Steam Packet Company fully that sum. She was not insured, and the loss will consequently fall entirely upon the insurance fund of the company—a fund exclusively devoted from annual grants derived from the profits of the company towards casualties of shipwrecks and loss of their vessels. The value of the specie, quicksilver, cargo, &c., when added to the value of the ship, will be a total loss of property by this melancholy occurrence of little less than £200,000 sterling.

The following is a description of the *Amazon* recently given by us:—

"She is the finest steam-ship that has ever appeared in these waters, and externally is a great credit to her builders, the Messrs. Green, of Blackwall, as well as to the Royal Mail Steam Packet Company, her full and lofty rig, and immense spread of canvass, together with her taut and warlike appearance, giving her at a distance more the look of a formidable war steamer than that of a packet-ship to be engaged in the peaceful business of conveying mails, merchandize, and passengers. Considerable interest is attached to the performance of the vessel, as she is the first of the new main line of steamers about to be established by the West India Mail Company between Southampton and the Isthmus of Panama. The several trials of speed were tested by the following gentlemen, who were on board, viz:—Mr. Hughes, the government engineer; Mr. George Mills, the superintending engineer of the Royal Mail Steam Company; Mr. Brani, of the firm of Seaward & Co., the makers of the engines; and by Mr. A. Austen, appointed by the Royal Mail Company to superintend the trials.

"We select a few of the particulars of the several results, with a view of giving an idea of the *Amazon's* performances. On Monday morning the *Amazon* ran from the Maplin Light to the Sunk, a distance of nineteen miles in one hour and thirty minutes, equal to a speed of 13·6 knots, but from this should be deducted the influence of a two-knot tide, giving an actual speed through the water of 11·6 knots, by both patent and common logs; the pressure of steam was at this time 12lb., the engines making thirteen and a quarter to fourteen revolutions, the consumption of coal being 53 cwt. 1qr. 16lb. per hour. Subsequently the *Amazon* ran from the Kentish Knock to the North Sand Head, a distance of twenty miles and three-quarters, with no tide, in 1h. 44m., equal to a speed of

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11·88 knots: or nearly thirteen miles and a half an hour. During the night of Monday, the weather being thick, it was deemed advisable to reduce the speed of the ship, and an opportunity of trying the effect of the expansive apparatus was afforded. After running through the Downs the engines were accordingly worked on the third grade of expansion, and with these eleven and three-quarter revolutions of the engines were made, with a consumption of 27 cwt. 2qr. 25lb. of coals per hour, and a speed of ten knots and a half; with the steam shut off, the engines making nine and a half revolutions, and an expenditure of 25cwt. per hour, the speed was 8·6 knots. On Tuesday morning the *Amazon* ran through Spithead and proceeded to the measured mile in Stokes Bay. Six trials were there made. The mean result of these six runs was 11·492 knots, equal to an average of 13·242 statute miles per hour. This performance is, on the whole, considered satisfactory, but a somewhat greater speed is anticipated on the official trial trip, when the stiffness of the machinery will be got rid of, and when the *Amazon* will be put in better trim than she is on the present occasion, her forward spar-deck near the bows, being now lumbered up with two immense surf boats and some heavy cylinder covers and machinery brought round from the Thames. The quantity of coals on board was between 500 and 600 tons; the regular quantity for sea is, however, 1000 tons. The *Amazon* steered very easily, and with great precision for so large a ship, and in turning the segment of a circle described was so small as to surprise the gentlemen on board. The ponderous machinery of the *Amazon* is most creditable to the manufactory of Messrs. Seaward and Capel; its beauty of finish, great strength, and admirable working, are much admired by all."

The destruction of the *Amazon* following so quickly upon the stranding of the *Demerara* at Bristol will be seriously detrimental to the interests of the company, as two out of the five new ships are thus withdrawn, leaving only three—viz., *Oronoco*, *Magdalen*, and *Parana*—with which to perform the Isthmus of Panama. Several of the old ships will have to be retained on the main line till other vessels to replace the missing ships can be constructed, and in the meantime much inconvenience will be experienced by the disorganisation into which the general mail service will necessarily be thrown by the non-employment of steamers of sufficient power and speed with which to maintain the chain of communication between this country and the West Indies, Central America, the Gulf of Mexico, Pacific, &c. We have no doubt the Directors will make every effort to remedy this state of things without delay, but a considerable time will elapse before so great a blow can be recovered, and the traffic will necessarily suffer to some extent by the competition of the New York route, which is found to be more speedy for the transmission of mails, passengers, and treasure from the Pacific and some other points, than can be provided by the Old West India packets, which are, when compared with other ocean steamers, so deficient in speed.

The West India Mail Company has been the most unfortunate of all the great steam packet associations in the loss of their steam ships. Since the establishment of the company in 1841, no less than eight of their fleet of steamers have been destroyed by casualties on the sea. We recapitulate their names—the *Medina*, wrecked on the 12th of May, 1844, on a coral reef, near Turk's Island; the *Isis*, on the 8th of October, 1842, sunk off Bermuda, having previously struck on a reef; the *Solway*, wrecked off Corunna, on the 8th of April, 1843; the *Tweed*, on the 12th of February, 1847, on the Alacranes Rocks, Gulf of Mexico; the *Forth*, likewise lost on the same rocks, on the 13th of January, 1849; the *Actæon*, lost in 1844, in the Negrillos, near Carthagena: and the new steamer *Demerara*, stranded in

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the river Avon, near Bristol, not long since. The wrecks of the *Tweed* and *Solway* were attended with peculiarly distressing circumstances, involving the loss of nearly one hundred and twenty lives, and in the case of the survivors of the *Tweed*, with an extent of hardship and suffering which has rarely found a parallel in the records of disasters at sea. The catalogue is closed by the burning of the *Amazon* on the morning of the 4th of January and by the harrowing occurrences which it has been our painful duty to recount in connexion with her destruction.

Great as the loss of the *Amazon* may be in a pecuniary point of view, and extensive as will be the inconvenience arising from an interruption of the mail service, and the postponement of long-desired improvements and accelerations in the transit, which would have been introduced into the working of this important line, these considerations bear little comparison with the frightful expenditure of human life which has attended the destruction of this stupendous vessel.

Among the passengers will be perceived the name of Mr. Eliot Warburton, the well-known author, who was deputed by the Atlantic and Pacific Junction Company to come to a friendly understanding with the tribes of Indians who inhabit the Isthmus of Darien. It was also the intention of Mr. Warburton, to make himself perfectly acquainted with every part of these districts, and with whatever referred to their topography, climate, and resources —an intention which has been frustrated by his untimely and dreadful death. Another of the passengers by the *Amazon* was one of the deputies to the Congress of New Granada, who was returning to the seat of Government in New Granada, as one of the commissioners of the Atlantic and Pacific Junction Company, empowered by them to negociate for some modifications of the very important concessions which were recently granted by the Legislature of New Granada to the agents of the company in reference to the construction of a ship canal.

The wives, families, friends, and connexions of many of the crew of the *Amazon* reside in Southampton, and the melancholy event caused a deep gloom in the town. Many of the officers, engineers, seamen, &c., have wives and families depending upon their exertions for support; and to the loss of their husbands, sons, and brothers, as the case may be, is added, in several cases, the proximate loss of the means of subsistance. A subscription has commenced for their benefit, the Mayor of Southampton, Mr. R. Andrews, heading the list of donations with the sum of £10.

Further Particulars.

The *Amazon* was, at noon on January 3rd, about 150 miles from Southampton, proceeding steadily on her voyage, and nothing occurred till a quarter to one on Sunday morning, the vessel then being about eighty miles north-west of Ushant, when the fireman reported a fire in the engine-room to Mr. Treweeks, second mate, the officer of the watch, who immediately sent the quarter-master to the captain, who instantly came on deck in his shirt, and examined the state of the fire, and ordered all hands on deck to the fire-engine. The flames soon burst out from the engine-room, and ignited the hay, &c., for live stock, a portion of which was immediately thrown overboard in a blaze. The captain immediately put before the wind, and ordered the engines to be stopped, but so great a hold had the fire obtained that engineers and firemen were unable to stop below, or to get at the engines, to stop them. At this time, which was less than half an hour from the discovery of the fire, it had obtained such a mastery as to baffle the exertions of the officers and crew, the flames ascending and cutting off all communication, and the vessel still under steam.

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The passengers, most of whom were in bed, were suddenly aroused by the dreadful cry of "Fire;" and immediately a simultaneous rush was made for the gangways. The strong and alert reached the deck, but numbers must have been suffocated below. On deck the whole "midships" was one mass of fire, and all were endeavouring to get aft, where the greatest chance of safety lay from the vicinity of the boats. One lady was seen rushing frantically about with her baby in her arms, seeking with a mother's instinct only to protect it from the death that was too surely awaiting both.

About 4 A.M. those in the life-boat saw a barque, of about 300 tons register, under double-reefed main-top-sail, close-reefed fore-top-sail, and whole fore-sail, on a wind which was about west and by south; she was within hail of the boat, and also of the steamer, and those on board the boat hailed and shouted, and the barque passed on between the boat and the *Amazon*, to windward of the latter, but to leeward of the boat. The life-boat did all that was possible in looking out for the other boats, or any of the passengers and crew who might have been in the water, but she was obliged to be kept head to sea, which was running heavy; one sea broke on board, and partially filled her. The steamer was at this time in a complete blaze, fore and aft, and about 5h. 30m. A.M. her magazine blew up, and in less than a quarter of an hour the vessel went down broadside on.

Most of the crew and officers were picked men from the company's service, and it was considered promotion to be transferred from any of the West India packets to the *Amazon*. Captain Symons, the unfortunate commander of the *Amazon*, was a most experienced officer. He was formerly in the Peninsular and Oriental Company's service. During all the time he commanded the West India packets he was enabled to boast that notwithstanding the intricate and difficult navigation of the West Indies, the Gulf of Mexico, and the central American coast, he never met with the slightest accident. He had not long been married. Lieutenant Brady was the Admiralty agent on the Alexandrian line. He was a highly intelligent and most amiable man. He was called on by the Admiralty authorities, almost at the last moment, to take charge of the mails on board the *Amazon*, in consequence of the illness of a brother officer. Mr. Roberts, the chief officer of the *Amazon*, was first in the company's service for promotion to a command. Mr. Wm. Angus, the second engineer, was wrecked in the *Actæon* and *Forth*, two of the West India packets.

From Captain Evans, his officers, and crew of the *Marsden*, the boat's crew from the *Amazon* received every kindness and attention, and after a sharp look-out from the masthead for any other boats, or vestige of the wreck, the brig bore up for Plymouth, and landed them about midnight on Monday. They were at once taken to the Globe Hotel, where they received from Mr. Radmore every attention that their case demanded, and were subsequently provided for by the agents to the Shipwrecked Fishermen and Mariners' Society.

One of the firemen saved endeavours to account for the origin of the fire from the overheating of the cranks and other portions of the machinery, which it was found necessary to play upon with water frequently; but at the time the fire was discovered, a period of six or seven hours had elapsed without its being cooled. He imagines that the great heat of the same and the boilers ignited the felt and wood casing around the steam-chest, and thus spread.

The Port Admiral at Plymouth in the course of the day, sent a steamer to cruize about in the vicinity of the wreck to see if any boats are yet to be picked up. The hope, alas! is almost against all hope.

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At Liverpool, on Wednesday morning, the excitement and anxiety to ascertain full and authentic particulars became painfully apparent among all classes. It soon became known that Mr. R. Neilson, of Dale Street, who was on board the *Amazon*, intended to proceed to Demerara, was one of the few survivors of the melancholy catastrophe, and that he returned home that morning. Crowds of eager friends immediately assembled at Mr. Neilson's office to congratulate him on his providential deliverance. Mr. Neilson gives the following particulars attending the calamity, in addition to those already made public:—

"The fire broke out about one o'clock on Sunday morning, the 4th instant, off the Bay of Biscay; it was first discovered by Mr. Vincent, who was afterwards picked up by the boat in which Mr. Neilson was. Mr. Neilson was the last man but one who got into the last boat, which was the starboard life-boat, and he had to get into the boat by springing from the ship's side, and sliding down the tackle-fall. Soon after pulling off from the burning ship they saw the second cutter struck by a heavy sea, and the others had fallen astern or already sunk. Keeping clear of the ship, and, at the same time, desirous to save as many as possible, they neared the dingy, and picked up Mr. Vincent, Monsieur Sisselet, and three others; they then took their stations in the dingy, Mr. Neilson in the bow, and Mr. Vincent at the stern, directing the men according to the seas they were likely to ship. After rounding the *Amazon*, with her head down, they saw one of the other boats capsized, but could render no assistance."

Independently of the great loss of life, the loss of property has been very considerable by this disasterous ocean conflagration. Many valuable consignments and remittances were forwarded from Liverpool by the *Amazon* for the West Coast; and amongst other losses may be mentioned the entire West India impression of the *European Times*. Several uninsured packages have also shared the general fate, and the inhabitants of Liverpool and Manchester will be among the heaviest pecuniary sufferers. Still it is said that the loss to the underwriters by the destruction of the *Amazon* will prove moderate, the cargo not having been very heavy, and the Royal Mail Steam Company, who have an accumulated fund for the purpose, being their own insurers. The cost of the vessel, which will now fall upon that fund, is supposed to have been upwards of £100,000.

The following descriptive letter from Mr. Neilson appears in the correspondence of the *Times*:—

Nothing could be more auspicious than the departure of the *Amazon* from Southampton-waters on her first voyage, on the afternoon of Friday, the 2nd of January, 1352. She was accompanied by the mail tender, crowded with the friends of the passengers, and the captain, by whom they had just been hospitably entertained on board, and who evinced by their hearty cheers at parting how sincerely they wished us a safe and prosperous voyage.

The *Amazon* was a beautifully built ship of 2,250 tons burthen, with a flush deck of nearly 300 feet in length, propelled by two splendid engines of 400 horse power each, stored with a supply of 1,000 sacks of coal, and 1,000 tons in bulk. She had on board 156 in all, including seven women and two children, viz:—fifty passengers and 106 of crew and attendants.

The wind was right ahead, but she proceeded steadily on till about nine o'clock, when the bearings of the cranks of the paddle-shaft became so hot that she was stopped until by pumping water upon them for an hour she was enabled to proceed. This operation was repeated during the night and following morning, and on Saturday, at 12 o'clock, our position was lat 49° 12′ long. 4° 57′. Towards evening the wind increased, still ahead—our course, west and by south half south. Between 8 and 9 o'clock, I was walking the deck with Mr. Best, of Barbados, speaking of the state of the en-

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gines, on which they were then pumping. "You appear very anxious about those engines," said he, "is there any danger?" "None," said I, "as long as there is plenty of sea-room; but with our engines stopped on a lee-shore, I would not give much for our chance of escape in such a night as we are likely to have from the appearance of the weather." "I hope," said he, "there is no chance of fire, as we should have two elements to contend with". "I hope not," I replied, "for we should have three, as it is evidently going to blow a gale, and we must then look to a fourth for our refuge." "God forbid!" said he, "three to one are fearful odds. Good night," and he went below. I then proceeded to the engine-room and found the bearings very hot. I mentioned to one of the engineers my apprehentions for the night, and recommended to slacken speed; while we were yet speaking the bearings became so hot that the contents of the grease-cup burst off like so much steam. Mr. Angus, the chief engineer, who had been most constant in his attentions, was immediately on the spot, stopped the engines, slacked the caps, and applied the pumps for two hours before we could proceed. I had several times during the day conversed with Mr. Angus on the state of the engines which he told me he did not expect would get settled to their bearings for at least a week.

From the necessity of keeping the bearings constantly lubricated a very large vessel of grease stood at the door of the store-room, which was under the galley. At about half-past 11, the engines were again put about, and I went on deck and joined Captain Symons, who stated his apprehensions of a heavy gale before morning, when he expected rain and a change of wind to the northward. We conversed till midnight, when he went below.

Being partially conversant with machinery, I felt anxious about the state of the engines, and walked the deck until half-past 12, when I again went to the engine-room, leaving Mr. Vincent, midshipman of the watch, on deck.

The engines were then going at three-quarters speed, and the engineer in attendance, putting his hand on the bearings, told me all was going quite comfortable, and I accordingly retired to rest.

About ten minutes after I had left the deck, Mr. Vincent proceeded below to set the time by the Captain's directions, when he perceived smoke and fire coming up the fore-hatchway past the ship's galley. He immediately gave the alarm to the officer of the watch, and ran aft to inform the captain, who instantly came on deck and directed his whole energies to the suppression of the fire.

I had not been in bed for five minutes when I first heard the alarm bell, and the cries of "fire," which were accompanied by the shrieks of several of the female cabin passengers, and rushing from my berth I saw the sparks and flames ascending the main hatchway above the engines, and many of the passengers hurrying on deck in their night-clothes.

I retired to my cabin and put on part of my clothes, when the increasing confusion warned me to lose no time in reaching the deck.

The first person I saw on reaching the deck was Mr. Barnet, of Trinidad, standing in his night shirt with a life-buoy round him, which brought to my mind that I had left a life-belt in my cabin, which I might perhaps recover if I had yet time. I looked towards the flames, which were rising from the main and fore hatchways in so bright a mass as to convey the impression that the fire had originated in or near the oil store-room, and that there might be time to regain my cabin, which I succeeded in doing though the windows were snapping right and left with the heat of the flames.

I could not at first lay my hand on the belt, it being dark; just as I had found it a tremendous crash of the glass panels of the division at the end of the cabins announced the approach of the fire aft.

On leaving my cabin to regain the deck several of the cabin passengers,

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appalled at the approach of the fire, dared not attempt the approach of the companion-stairs; I urged them forward in vain, and drawing a long breath I gained the upper deck unhurt.

No description could convey any adequate impression of the scene which there presented itself. With the exception of the officers and men of the night watch, I was the only one even partially clothed.

Whatever human exertion could effect was attempted by Captain Symons, regardless of himself, to induce the assistance of others to extinguish the flames; but in vain, for so rapid was their progress that all communication, fore and aft, was already obstructed. The last order I heard him give was, "For God's sake Mr. Roberts, put her before the wind."

This Mr. Roberts immediately attempted, and young Vincent, who was lowering down the dingy, jumped to the helm and put it hard up until the ship payed off.

In the mean time the aftermost boat on the port side (I think the mail-boat) was lowered down, with probably twenty-five people in her; but the moment she touched the water she swamped and all hands that were in her drifted astern, all clinging together with dreadful shrieks.

The next boat forward (the pinnace) was also lowered full, but by some accident the after tackle alone got unhooked, and she was dragged forward by the fore-tackle with such rapidity that the sea swept round her sides and washed every soul out of her.

The next boat on the same side was a No. 2 life-boat, at which I observed several hands trying to get her into the water while the fire was rapidly coming aft, and on the platform of the paddle-box was a White's life-boat so secured as to render it almost impossible under such circumstances to get her loose. In the mean time, Mr. Vincent, with three of the crew and one passenger, had got into the dingy, which was hanging over the stern. A similar number of boats, were on the starboard side. The aftermost boat (which I think was the gig), was lowered only half full, and got away. A second cutter was lowering full of people. In the next boat (a Green's life-boat) were about twelve of the crew, most of them dressed, trying to get her launched, which, however, they could not effect, owing to her keel being socketed in the keel-crane, which projected from the ship's side.

My first intention on coming on deck in my life-belt, and seeing the confusion that prevailed, was to wait until a boat had got clear and then jump overboard and swim to it; but, on observing the coolness with which the men in the life-boat were working, I determined to share their fate, and accordingly got into the boat to assist in launching her. Our united efforts proved ineffectual; the fire had reached the companion, when one of the men, seizing my arm, said, "Jump on deck, and haul away that tackle fall." We both did so at the after-tackle, two other men being at the fore-tackle. We raised the boat, with the men in her, out of the gripe of the crane, and one of the men loosing the bolt, I got over the ship's side and shoved the crane in, and the boat began to lower.

At this time the second cutter had reached the water, when the sea struck her bow, and as the ship rose from the swell of the waves she lifted the boat perpendicularly by the stern tackle and discharged all the unfortunate inmates but two, who hung, shrieking, across the thwarts.

The flames were now rushing up the companion with such fury that they caught the two men who were lowering the fore tackle of our life-boat, and burnt the hair off the face of one of them, who immediately jumped into the boat, followed by the man at the after tackle. I sprang from the side, and slid down the tackle into the boat as she reached the water, and as the other man at the fore tackle did the same I gave the word to cut away. "Hold hard," said one of the sailors, who had far more presence of mind.

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"Fend her off! If we drift under the cutter, she'll stave through us. Now cut away," said he, and we drifted clear, the doomed ship rushing madly forward, the sport of the combined fury of the three elements, so sadly alluded to in my remark to Mr. Best. But far above the roaring crash of wind and wave and fire rang the shrieks of the helpless sufferers on board the ill-fated *Amazon*.

From a moment of deep and heartfelt gratitude to Providence, we were aroused by the cries of drowning fellow creatures around us, to whom, alas! we could render no instant assistance, for the oars were lashed amidships, and the rudder was stowed away. Of two loose oars that had been thrown into the boat we pushed one to a poor creature who was within five yards of us, but the shrill bubbling cry which accompanied his effort to reach told too sadly it was in vain.

We were now hailed by the dingy, which had left the vessel about the same time as we ourselves. She was fast filling with water, which Vincent was bailing out with his boots, having cut the tops off. We called them to come alongside, and took them into the life-boat, laying Mr. Sisley, the passenger, who was more dead than alive, at the bottom of the boat.

We took the dingy in tow, and got our rudder shipped, threw the masts overboard (for we had no sails), got the oars out into their crutches, which we had not been able to find till then, and pulled away for the burning ship, to try to save some more lives. The fire gave us plenty of light, though the moon was obscured by clouds. The wind, however, had now increased to a severe gale, and before we had proceeded far on our mission, a heavy sea struck the dingy and capsized her, drove her on our stern, broke away our rudder, and nearly half filled us with water.

I was in the bow, and sang out to cut away the dingy, and get her head to wind, which Mr. Vincent, who was in the stern, had already commenced doing, and scarcely was this accomplished ere the approach of a tremendous sea through the surf, and over the top of which our boat gallantly rode, gave us ground for hope that we might still live through that awful night. It was, however, vain to attempt the rescue of those who were drowning round us. The slightest deviation from the wind's eye, in such a sea, would have swamped our boat. Behind us the burning ship shed a light which illumined the sky and sea for miles around. Before us the sky and sea seemed to meet in one dark undistinguishable mass, the immediate approach of the waves being indicated by a rushing sound as their crests broke far above our heads in a long white line of foam, glaringly reflecting the burning ship behind us. In this position, without food or water (for we staved our only small water-cask to bale the boat when nearly swamped), without compass or rudder, and several only half clothed, we remained for about three hours, Vincent in the stern and I in the bow, watching the approach of the waves and giving the orders to the men to pull starboard or pull port, so as to keep her head dead to windward.

During this time we were drifting towards the ship, which was burning broadside on to the wind. Her mainmast went first, and then the foremast, and a considerable time elapsed before her mizenmast went; directly after which I noticed a slight explosion of gunpowder. Previous to this a barque hove in sight, and passed between the stern of our boat and the burning ship. We judged her to be outward bound, from her being under close-reefed topsails. As she passed, between 300 and 400 yards distant, we several times hailed her with our united voices, strengthened by all the energy of despair. She answered us, and brailed her spanker, and we thought was preparing to bear up to our rescue.

I shall never forget the deep sob of hope with which I noticed these preparations, or the bitterness of feeling with which I saw him spread his can-

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vass to the wind and wear round past the stern of the burning vessel as he left us to our fate.

For some short time past I had noticed a boat a short distance from our starboard beam, which I believe was the gig, with apparently about half-a-dozen hands in her. She now began to call for assistance, which also we could not attempt to offer, the sea was running so high.

This continued for some time, when the hailing suddenly ceased, and as I never saw her afterwards, though I often looked most anxiously in that direction, I cannot resist the sad conviction that she shared the fate of the other boats.

About four o'clock it began to rain heavily, which beat down the sea, and as the wind, which had hitherto been south-west, got round to the north, it blew more steadily and with less violence.

We accordingly put the boat's head down the wind and pulled away astern of the burning ship. Her chimneys were red hot, and as we crossed her stern at the distance of about half a-mile, her magazine exploded, discharging a considerable number of rockets, and in about half an hour after, her funnels went over her side, she sank beneath the waves, and the red lurid light which for the last five hours had illumined the dreary expanse of the ocean, and formed the strong ground of hope for the attraction of succour, was succeeded by a gloomy darkness.

I remembered Captain Symons's observations as to the change of wind in the event of rain, and having frequently noticed our course by the compass during the previous day, I was enabled to form some notion, though a vague one, of the position of the coast of France and the British Channel, and we pulled away in that direction during the remainder of the night.

The morning broke bright and clear, and never was a rising sun hailed by an Eastern devotee with more fervent gratitude than that with which we blessed Almighty Providence for having preserved us from the complicated dangers of such a night. And though our position and prospects were by no means those which would have been selected from choice, the buoyancy of hope induced us only to think of being picked up by a passing vessel.

I joined Vincent in the stern, and we proceeded to con over our probable distance from land, and as we knew that unless picked up we could not make it for five or six days, even with a favourable wind, we arranged for a division of the men into watches, taking each one.

The wind considerably abated, and we pulled steadily on for about three hours longer, when the man on the look-out forward cried out that he saw a sail. At least a quarter of an hour elapsed before it could be again sighted, and still longer ere it showed by its increased size that it was outward-bound. We immediately altered our course, and commenced pulling dead to windward so as to intercept her, which with a couple of hours' hard pulling we managed to accomplish, and hailed her before she was aware of our approach. She was an outward-bound brig, and from her white sails and green caboose we took her for a foreigner, and one of our men hailed her in the Dutch language.

As we had been approaching her, thinking of the barque that had left us during the night, we were speculating on our chance of obtaining assistance, but we little expected that our first hail would be followed by every exertion to get away from us. The wind had, however, completely lulled. I saw that we had the speed of her, and I shouted to the men to give way and we would board her by force.

This was unnecessary, for the captain, whom the gale had kept on deck all the previous night, and had been asleep in his berth when we first hailed, now came on deck, backed his mainsail and main-topsail, and, calling us to come alongside, cast a rope to make fast to our boat. Though the wind was down,

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there was so much sea on as to render it a difficult matter to board the brig. Several ropes were thrown over, one of which I seized, but from its only being partially secured I fell overboard, but was immediately picked up, not a bit worse, and we all succeeded in getting on board the brig *Marsden*, from London, bound to Carolina. Nothing could exceed the kindness with which Captain Evans treated us all, giving up his beds and providing the best resources his vessel could afford. He first tried to land us on the coast of France, but the wind shifting he was obliged to stand out to sea in the hope of falling in with an inward-bound ship. This not occurring he determined to land us on the coast of England, and tried for Falmouth. The weather became hazy, the wind began to blow, and as he had not been able to get a sight of the sun at noon on Tuesday, and the weather thickening in the direction of the English coast, towards evening he stood up Channel, made the Eddystone Lighthouse about eleven, and anchored in Plymouth harbour between twelve and one o'clock.

It seemed as if every vestige of the unfortunate *Amazon* was destined to destruction, for the life-boat in which we had been saved, and a better boat never was built, after being towed to within thirty miles of the British Coast, wore through the rope and went adrift. We all bewailed her loss for the moment like that of a tried friend.

We landed at Plymouth, and found our way to the Globe Hotel, where we were received by Mr. Radmore, notwithstanding our very questionable appearance, with the most hospitable attention. Supper, beds, and money were at once offered to us, and the following morning he received our eighteen fellow-travellers with the same kindness.

The mayor of Plymouth also called the following morning with offers of every assistance, and I take the opportunity through your columns of acknowledging the grateful sense I entertain of the kindness we have received. But a far deeper debt of gratitude than can be thus acknowledged is due to that Almighty Power who by His mercy has thus preserved us from the perils which that awful night saw so fearfully combined against us.

I cannot close my narrative of this event without adverting in the strongest terms of praise and admiration to the conduct of young Vincent. Throughout the whole of the dreadful scenes through which we passed, he never showed the slightest symptons of fear or hesitation, or uttered a single murmur or complaint.

His whole care seemed for the men, of whom he took the command with the calmness of an old officer, and having on him as one of the officers of the watch, when he escaped the full complement of clothes, he gave his pea-jacket to one of the men who had only a shirt on, a flannel shirt to another, and his handkerchief to a third.

I have been in scenes which have tried the nerves of hardened men, but never in any more calculated to try them, than those through which this young officer passed unruffled. I must speak also in the highest terms of the steadiness, firmness, and unwearied exertions of our boat's crew, who notwithstanding the heavy sea and the crowded state of the boat, with twenty-one in her, were most eager to brave every danger for the chance of offering still further aid to their drowning comrades, while the possibility of a chance still remained. There are two or three points to which I wish to call attention in connection with all steam-vessels.

There ought to be some means available on the upper deck of opening the feed-cock of the boilers (the man who did it on board the *Amazon*, gave me a fearful account of his narrow escape), and also of working the fire hose upon the upper deck, but still more the means of being able to stop the engines. Had this last been done, and half the energy displayed by the gallant commander in lowering the boats, that was ineffectually expended in at-

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tempting to check the progress of the fire, there was ample boat accommodation and of first-rate quality, to have saved all hands.

There were two of White's life-boats on the platforms behind the paddle-boxes, capable of holding thirty five men each, but they were so stowed away as to render it difficult for any ship's company to have lowered them under ten minutes each even in broad daylight; two other life-boats, in one of which we were saved, which would carry safely twenty-five men each, a mail boat, pinnace, and cutter twenty men each, a gig fifteen men, and the dingy. Seven of these at least, and perhaps the gig, if well managed, would have lived through that night, if proper crews had been appropriated to each so as to lower and take charge of them; yet of all these, as far as I can judge, only one survived the wreck.

Though I know little or nothing of nautical affairs, I cannot help thinking that the two best life-boats might have been sufficiently secured, and more available when wanted.

On the origin of the fire I can say but little. There was a number of new coal sacks very much tarred lying between the steam chest and the oil store, above the grated pathway over the coals; but at half-past 12 o'clock I stood opposite to this, and all was safe, and at that time the engines were quite cool.

No blame can attach to the engineers, who were particularly attentive, and Mr. Angus, the chief engineer, who was almost constantly on duty. All the lights abaft the engine-room were out when I retired to rest, and I had bid good night to the officers of the watch and several men on deck when I went below at half-past twelve.

The fire first appeared coming up the fore-hatchway, and within two minutes of the first cry, before the bell was sounded (for I was wide awake), I saw the fire rushing up the main engine hatchway.

When on deck the second time I had intended to leap overboard and swim to the first boat that got clear of the ship, and I stood there for a short time before turning to the life-boat in which I escaped, and had therefore an opportunity of watching the heroic conduct of Captain Symons, and several of his officers and men in attempting to suppress the flames, in which, if human exertions could have availed anything, he would have succeeded.

Fate, however decreed otherwise, and unless the other life-boat was got away, or the gig escaped, I have too much reason to fear that our party of twenty one, who were landed at Plymouth on Tuesday morning, are all that are left of those who sailed from England on Friday afternoon, in the ill-fated *Amazon*.

I am, &c.,

Halewood, January 8th.—Times. ROBERT NEILSON.

Southampton, Friday.

Public interest continues still so painfully excited on the details attending this melancholy disaster, and there has been given so much by piecemeal, that probably we shall be rendering a service to our readers, if we attempt to throw the whole into one connected narrative, passing as lightly as possible over those facts that have already been brought prominently before the public.

The *Amazon* was one of five ships which the Royal West India Mail Steam Packet Company had ordered, of a superior class to those already in their service, to meet the demand that was made upon them for increased speed and accommodation. She was the second of the five that had been built for the Company; and it is painful to think that both these noble vessels have perished before they had ever performed a single voyage—the *Demerara*

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becoming a wreck whilst proceeding down the River Avon from Bristol—the *Amazon* perishing by fire before she had well cleared the Coast of England.

The *Amazon* differed in several respects from the older steamers in the Company's service. She was considerably larger, her engines being of 800 horse power. This immense power rendered necessary larger machinery. The old vessels are worked with four boilers on each side of the ship, all in the after part of the engine-room. The *Amazon* had double the number, eight in the forward, and as many in the after-part of the engine-room. There were consequently two funnels, one about the midships, the other immediately behind the foremast. The store-rooms containing large supplies of oil, tallow, waste, and other materials, are placed in the old vessels in the fore part of the engine-room, at the opposite end from the range of boilers. In the *Amazon* these store-rooms were also in the fore part of the engine-room; but as there were double ranges of boilers, it happened that the floor of the store-rooms rested directly upon the wood casing that surrounds the boilers or steam-chest. Then with regard to the boats, about which so much has been said; most of the older vessels have life-boats resting bottom up on the top of the paddle-boxes, and the smaller boats swing from two iron props or davits, by ropes, that running through a pulley, enable men seated in them to lower themselves from the ship's side to the water, when the hooks by which the tackle is attached to the boats may at once be cast off. But, as it would be inconvenient that the boats so hung from the davits, should be swinging backward and forward with every roll of the ship, ropes are lashed round them, and fastened to the bulwarks, in order to keep them steady. Now, in order to get quit of this latter somewhat clumsy contrivance, as well as to ease the strain of the boat upon the tackling by which it swings, a different mode of fastening them was adopted in the *Amazon*. There were davits as usual, and the common contrivance for lowering the boats into the water; but, instead of undergirding ropes or guys, two iron props were introduced, each of which branching out at the top into two prongs, received in its grooves the keel of the boat, in which she sat as in a cradle, thus taking away all strain from the ordinary tackling. This change in the mode of securing the boats, had however this effect—that whereas in the former case the boat's crew had but to lower the boat and themselves into the water, by this new mode it became necessary, before they could do that, to hoist the boat up a few feet till it was got clear of the projecting points of the crutch on which it rested. Of what fatal consequence this necessity was will become but too apparent in the course of the narrative. It may be added that the life-boats, which were very large, and could have held 100 people a-piece with ease, were secured in the same manner, and did not, as is usual, lie on the top of the paddle-boxes.

The following is an account of the adventures of the survivors, picked up by the Dutch galliot:—

Mr. Allen, foreman of Messrs. Seaward said, I jumped into the gig, which a few minutes before I had seen stove by the cranes, in attempting to lower her, and from her—I can hardly tell how, I got into the boat below followed by Stone, John Lamont, Mr. Glennie, (passenger), and one or two others, when a sea rising threw our boat up under the gig, which was still lashed, nearly capsizing us several times. I called out to cut away the rope and let her go. It was done, and we went rapidly astern, the ship having way upon her, notwithstanding the engines had stopped. To our surprise, we found Mrs. Maclenan and her child lying in the bottom of the boat; the poor lady had nothing but her night-dress on. Finding the boat rapidly filling, and on looking for the cause, we discovered the plugs were left out. With some waste paper Stone and another blocked up the holes. We then prepared to put the boat ready for sea; we lashed the mast in the boat and threw it

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overboard, in the expectation it would keep her end on; but finding the sea breaking over us, we pulled the mast aboard again, and got two sculls out to pull, lashing the other (there being only three on board) at the stern to steer the boat. We went before the wind, not having sufficient strength to contend with the sea, which was running mountains high. We hoisted a lady's shawl for a sail, and carried on in that way until three in the morning, when it came on to rain heavily. A sea breaking over us, carried away our tiller, and I thought then, it was all over. By means, however, of a breaker, which was left in the boat, and our boots, we managed to bale her out. Towards four in the morning the wind abated. We were then drifting away many miles from the ship, which was one mass of flames, the fire rushing out of every window and porthole, and from the funnels to the height of twenty feet. We lost slight of her about five, but did not see her go down. At half-past 11, or about 12, a sail hove in sight, and every man plied the oars, and we pulled until half-past 6, when we fortunately reached the vessel, a Dutch galliot. I should have added, that at half-past 6 o'clock on Monday morning we fell in with another boat, containing five of the crew, two male and one female passenger, Miss Smith, who gave the following account of her escape.

"Being alarmed on seeing so much in others, I immediately took up a blanket and two petticoats, and rushed up the companjon stairs aft. The flames at that time were rushing through the after bulkhead. I went to the side of the ship and seized a rope, and on looking round I saw an officer running towards me in flames. He threw himself down and rolled over towards me, with the endeavour no doubt, to extinguish the fire. Observing a boat alongside I swung out, holding by the rope for some time, the boat under me having capsized twice. At last seeing a favourable opportunity, as the boat righted and was again under me, I let go my hold and dropped into the boat, a sailor at the same time endeavouring to catch me. We remained within a short distance of the burning ship, in the hope of saving others, for I should think two hours; and although we could distinctly observe the poor creatures huddled together aft, and many on the bows and bowsprit, we did not perceive any in the water. By this time the engines had ceased. When all hope was gone, the men prepared to pull towards land, if possible. Although we were about thirty hours in the small boat, during the whole of which anxious time there was nothing either to eat or to drink; but, notwithstanding this, the gallant fellows who had so laboriously exerted themselves to save our lives uttered not a murmur."

There are a variety of rumours in Southampton about Captain Symons's unwillingness to go to sea in the *Amazon*. It is an undoubted fact that he would much rather have stayed at home than have taken the command of the *Amazon*. This desire he expressed while dining at the Royal George the day before he sailed. A friend likewise wishing him good-bye in Southampton Water a few minutes before he sailed, said jocosely, "Good-bye, Captain Symons, of the *Amazon*." He replied sharply, "No, I will not have it; I am Captain of the *Orinoco*," (one of the large steamers not yet completed.) When Captain Symons took leave of the pilot at the Needles he was depressed in spirits. He shook hands with the pilot and said, "Well, God bless you; you have done your duty, the responsibility now rests on me." The truth was, Captain Symons did not like the *Amazon* because it was not his ship, and all sailors are fanciful and superstitious; but it is a libel on the humanity and manliness of a truly brave, kind hearted, and honourable man, to suppose that he had any doubts as to the safety of the ship. In fact there is not the slightest foundation for thinking so.

The Board of Trade, we understand, are carrying on an independent inquiry, when we trust the government officers who tried and surveyed

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the ship, and reported on her to the Admiralty, will be closely examined. Portions of wreck of the ship are being thrown up on the coasts of Devon and Cornwall.

[It is gratifying to find that the subscriptions (see Advertisement Sheet) for the survivors of this sad event are progressing favourably: in addition to the bankers advertised they will be received by Mr. Potter, 31, Poultry, Admiralty Agent.—ED.]

A SHIP ON FIRE.—FORCE OF DISCIPLINE.

The following which appears in a recent number of the *United Service Gazette* forms a remarkable contrast to the foregoing.

Whether any discipline, however rigid and perfect in detail, could have preserved the ill-fated *Amazon*, is a question which is not my province to answer, even were I thoroughly acquainted with the facts; but as we see so many melancholy proofs of the absolute want of discipline on board ships, both in the mercantile and Royal navy, I will, should you deem it proper to grant me a small space in your impartial and widely circulated journal, give you an instance of the force of it. In 1831, on board His Majesty's ship *Magicienne*, at sea, many hundred miles from land, about 4h. 30m. A.M., (dark of course), the ship *Corporal*, on going the "rounds," smelt, or rather fancied he smelt fire, in the fore cockpit. On descending the cockpit-ladder he observed the foresail-room to be on fire; he made no alarm on the lower deck, but according to the order in the "fire bill," quietly made his report to the commanding officer, who instantly, without dressing himself, communicated it to the captain, who jumped up through the skylight hatchway in his bedgown, and coolly gave orders to beat to "quarters," at the same time sending a hand aloft to see if he saw a ship to leeward;—on his answering in the negative, the captain says, "You be ——, sir; I can see her." Then looking round to the man at the helm, "Do *you* see that ship, sir?" The poor fellow, afraid to say "No," answers "Yes, sir." Then "put the helm up, and keep towards her." He then ordered the fire-bell to be rung, at the same time calling aloud, "Fire in the fore sail-room; sail-trimmers, shorten and trim sails; sentries under arms; over the boats." Every man and officer darted to their respective stations with lightning speed. Sail-trimmers having hauled up the courses, and brailed the fore and aft sails up, remained steady at their quarters; pumps, engine, buckets, &c., were worked with more than mortal energy. The water from every direction rushed down on the devouring element to an extent that must either have extinguished it or swamped the ship. The party whose duty necessitated them to be where the fire *was*, notwithstanding their perilous position, immediately over the magazine—the light room where the fire originated already burned, and the flames within three inches of the powder, cleared the burning sail-room with all that energy and self-possession peculiar to British seamen in such emergencies, when commanded by a rigid and determined disciplinarian. More than ten minutes did not elapse from the time the drum beat to quarters till all was over, and the gallant "craft," under all canvass, again pursuing her course. So quietly was every thing managed, that those "sail-trimmers," at the *after quarters* never knew that the ship was actually on fire, but merely thought it a sham for exercise. Not a man or sail-trimmer was allowed to look round, or speak, or whisper to his neighbour. The piercing eye of the captain was upon them, who, in his bedgown, walked the deck, with his arms folded, his step as firm and features as composed, as if he had been parading the quarter-deck of the guard-ship in Portsmouth Harbour.

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No one, save the captain, first lieutenant, and corporal knew the ship to be on fire until every man was at his station. How long the fire had been burning we never ascertained. Suffice it to say, had it not been for the corporal discovering it at the moment he did, the ship would have been blown up, and every soul on board unconsciously hurried into eternity; and it was equally fortunate for us, *when* discovered, that we were commanded by a man possessing all the firmness, coolness, and presence of mind requisite to control and direct on such an awful occasion. Had the corporal, instead of acting according to the orders on the fire-bill, given the alarm of "Fire in the foresail room," those in their hammocks would have been so panic-stricken, knowing the proximity of the sail-room to the magazine, that neither threats nor persuasion of any description would have tended to recal their self-possession, To leave the ship would have been impossible; the quarter-boats might have been lowered, but the large boats inboard were lashed and secured for sea, so that we could scarcely have made an attempt to clear them before the fire would have reached the powder in the magazine. There was but one alternative—make a desperate effort to subdue the flames—we did so, and were successful. A splendid ship and a gallant crew were saved by the force of discipline.

I may remark that the order given to the man at the helm to "steer direct for that ship," * had a considerable effect on the spirits of those who knew the worst of the case; they, no doubt, imagining all the while that there was a ship to escape to should their efforts to extinguish the fire fail. I need scarcely say the *Magicienne*, at that time, was commanded by James Hanway Plumridge. She was on her passage out to India, and on, or near the equator.

THEN AN A.B. IN THE "MAGICIENNE."

THE RECENT ATTACK ON LAGOS.

AN attack on the King and the slave traders of Lagos was made on the 25th of November last by the combined crews of a squadron of cruizers, which included the Officers, Seamen and Marines of the *Philomel*, 8, Commander Forbes; *Harlequin*, 12, Commander Wilmot; *Volcano*, steam vessel, Commander Coote; *Niger*, 14, screw sloop, Commander Heath; and *Waterwitch*, 8, Commander Gardner—the force consisting of twenty-three boats, with 260 Officers and men, under the command of the senior Officer, Commander F. G. Forbes, of the *Philomel*.

The King of Lagos, Cogioco by name, had forbidden the men-of-war boats from coming up the river to Lagos; but previously Mr. Beecroft, the Consul at Fernando Po, with the Commanders of the *Harlequin* and *Waterwitch*, and Lieutenant Patey, the Commander of the *Bloodhound*, steam tender, had been received by the King with every demonstration of respect. They, however, failed in their object to engage the King to promise, on the part of himself and subjects, not to favour the slave trade. Mr. Beecroft then determined on seeking another interview with the King, and in order to show his sable Majesty the hopelessness of any successful persistence in carrying on the inhuman traffic, arranged that the armed boats of the Squadron should accompany him up the river under a flag of truce.

Accordingly, a course over the bar having been surveyed by the Masters of the *Bloodhound* and *Waterwitch*, the *Bloodhound* steamer, with a white flag, and following boats of the Squadron, Mr. Beecroft in Commander Wilmot's gig starting 100 yards a-head, proceeded at daylight of the 25th of November towards the river.

* There was no ship in sight.

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Philomel.—Commander Forbes, in the whale-boat; Licutenant Williams, in the pinnace, with twelve-pounder carronade, and cutter and whale-boat.

Harlequin.—Commander Wilmot, in the gig; Lieutenant Boughey in the pinnace, with cutter and two whale-boats.

Vulcano.—Commander Coote, in whale-boat; Lieutenant Reeves, in paddle-box boat, Lieutenant Robinson, in paddle-box boat, with cutter.

Niger.—Commander Heath, in the gig; Lieutenant Dunn, in the pinnace, with three cutters and whale-boat.

Waterwitch.—Commander Gardner, in whale-boat; Lieutenant Graham, in pinnace, with cutter and whale-boat.

As the force crossed the bar, and about four miles distant from the point, a heavy fire of musketry was directed towards it. No notice, however, was taken of this ineffectual show of opposition to the progress of the boats, and the flags of truce were kept flying. When within about a mile and a half of the town the *Bloodhound* grounded, and as she could not be got off the boats formed line and proceeded up the river, and kept on, with the flag of truce flying, until they received a heavy fire from some guns and musketry on shore. The fire was harmless on account of the distance; but now the boats opened their fire with shrapnel shells and round shot, the *Niger* at the same time throwing a shell or two on the point near the mouth of the river. After exchanging a continuous fire for nearly an hour, with a beach lined for more than a mile with bodies of men, the boats dashed at the shore and effected a landing simultaneously at one spot, when leaving a sufficient guard at the boats, about 160 Officers and men fought their way into the town. They were met, however, with most determined resistance on the part of the natives, who disputed every inch of the narrow streets intersecting each other, and when beat out of one street ran round by the backways and showed front again at the end of other streets. After some gallant fighting in this way against an increasing enemy, which amounted to at least 5000, and having two Officers killed and six men wounded, Captain Forbes determined on setting fire to as many houses as they could and retreating to the boats. Having fired the houses in the neighbourhood they retreated in good order, and having re-embarked, proceeded to the *Bloodhound*, got her afloat the same night, and the next morning re-crossed the bar; the force having sustained the following loss—comparatively small when the number of the enemy is taken into account, and when it is considered that, in adddition to their force of half a dozen large guns, and as many swivels, which were constantly served, almost every house was a fortification.

Killed.—Mr. Dyer, Mate of Niger; Mr. Hall, Mate of Niger.

Wounded.—Charles Hancock, Serjeant, R.M.A., of Niger, seriously; John Goulding, Gunner, R.M.A., of Niger, dangerously; Urbane Collet, Bombadier, R.M.A., of Niger, severely; William Hall, Seaman, of Niger, severely; John M'Carthy, Seaman, of Niger, severely; Richard Gomett, Seaman, of Niger, severely; J. Todhunter, A.B., of Niger, severely; a Quartermaster of Philomel; two men of Volcano, severely.

In addition to the above, others received hurts from spent balls.

The Niger took the wounded to Sierra Leone, and proceeded in search of the Commodore; and it was understood that Commodore Bruce had proceeded to Lagos to organize such a force as would compel the King of Lagos to submission; the Harlequin, in the mean time, by her presence off the coast, preventing the King of Lagos from forming any new expedition against the missionary establishment at Badagry.

NAUTICAL NOTICES.

TORRES STRAIT BY BLIGH'S ENTRANCE.

[We lose no time in giving publicity to the following account of a passage made by the ship *Gambia*, of Liverpool, through Torres Strait by the northern

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channel, called Bligh's entrance; as the recommendation by her master of that channel added to Captain Blackwood's previous account of it, and the excellent chart bid fair to establish its adoption in preference to any of the intricate channels hitherto used. Captain Blackwood's account of this channel was published in our volume for 1845.]

Sir.—Having followed the late sailing directions of Captain F. P. Blackwood, and route through Torres Strait by the coast of New Guinea, entering north of the Barrier reef, I beg leave kindly to submit to your notice an account of our passage through in the ship *Gambia* of Liverpool, from Sydney to Calcutta. August 9th, 1851, at 6h. 45m. P.M., started from Sydney Cove with a strong breeze from south-west, at 7h. 30m. cleared the heads and steered a N.E.b.E. course by compass, until in 155° east. On the 13th at noon being in lat. 24° 2′ south, long. 155° 48′ east, steered a *true north* course with the intention of seeing Kenn's reef next day, as we did not wish to lose time by waiting for daylight to make Bird Isle, we ran on with a good look out from the mast head, and at noon on the 14th placed the ship in 21° 11′ south, and 155° 49′ east, by a good observation, which is two miles (true) south of the postion of Kenn's reef on the chart (general chart of Terra Australis, corrected up to 1843). The day being tolerably clear, we had a particular good look out from the mast head for the said Rock, but nothing whatever could be seen as far as the eye could reach. From the uniform rate and correctness of my chronometer, I am very strongly of opinion that this danger is placed at least seven or eight miles too far east on the charts, and from the reason of its being immediately in the track of ships steering for Torres Strait deserves further attention, and a more correct position assigned to it. We now altered our course more westerly, and followed along the Cumberland track on the chart, keeping from twenty to thirty miles more easterly than it. The trade wind being very strong and a hazy atmosphere rendering the horizon at times very uncertain, besides, being an entire stranger to Torres Strait, I determined to follow what appeared to me (from an impartial and careful inspection of the latest Admiralty charts of these parts) to be the clearest and safest passage through, (notwithstanding that I had been cautioned by some old hands before leaving Sydney, not to attempt it,) and accordingly steered to pass through by Bligh's entrance, as recommended by Captain Blackwood in his most excellent work on the subject. On the 19th of August at noon, our position by good observation was 9° 33′ south, and 145° 20′ east; having passed the eastern fields between four and five o'clock in the morning at the distance of about ten miles without seeing them, and at five P.M. saw the breakers on the northern extremity of Portlock's reef, bearing south by east by compass about five miles. At 6h. 45m. P.M. hauled off E.N.E. close by the wind. At midnight sounded in 55 fathoms coral and shell. Wore round on the port tack, courses hauled up. At 3h. A.M. lat. by stellar observation was 9° 21′ S. Bore away and steered in W.¼S. by compass under easy sail. At 5h. A.M. observed lat. by Moon's meridian altitude 9° 20′ long. by Rigel east of meridian 144° 17′ 45″ east. At 6h. A.M. saw the breakers on East Cay from the topsail yard bearing south by compass, about four miles. At 7h. 15m. A.M., Anchor Cay S.¼E. by compass, two and a half miles, got a sight for the chronometer which made our long. 144° 2′ 45″ east. At 9h. 30m., a sand bank south by east of us four miles, which we rounded and hauled up S.W.b.S. At noon of the 28th was abreast of Stephens Island. At 4h. 30m. P.M., anchored under Arden Island in 13 fathoms. At 7h. A.M. next morning, weighed with a fresh wind and hazy weather. At noon of the 21st, passed between Poll rock and a sand bank south of it. At 2h. P.M. passed between Double Island and Monday Bank. At 3h. P.M. passed Wednesday Island, and at 7h. P.M. anchored for the second time off Booby Island in seven and a half fathoms, thus making in twenty-one hours under sail from Anchor Cay, and twelve days from Sydney Cove.

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I am so satisfied with the great advantages of this route over any other through the Barrier reef, (so far as safety is concerned) that were it generally known to masters navigating through Torres Strait it would invariably be adopted: in my opinion there is very considerable less risk in entering by the route (where we have soundings to help as a guide by night—if waiting for daylight and a clear stretch to the north,) than running down for any of the openings through the Barrier, more particularly with a light ship and strong wind, as she would find it difficult to beat to windward; but let every man judge for himself, a mere glance at these new and excellent charts of Captain F. P. Blackwood will at once satisfy on this point, for my part I am so decidedly in favour of it, that I think vessels taking this route should be insured at a lower premium than those going through any part of the Barrier.

Trusting you will give this publicity through your far famed volumes.

I am, &c.,

HUGH ANDERSON, Master.

Calcutta, November 20th, 1851.

ROCK IN THE CHINA SEA.

Singapore, 30th October, 1851.

SIR.—I have to inform you that when beating down the China Sea, from Hong-Kong to Labuan, with single reefed top-sails, the wind at south-west, and a considerable sea on September 7th, at 8 A.M., just after we had sights for the chronometers, breakers were reported to leeward—they were barely distinguishable, and standing on to the southward we soon lost sight of them, at noon we tacked to the North-west in lat. by observations, 11° 25′ N., and at 4 P.M. passed to windward of breakers plainly seen extending about two miles in a N.N.W. and S.S.E. direction. We passed not more than half a mile to windward of the broken water, and at one time saw the bottom under the ship, but before we could sound passed on to deep water. These breakers had been the same we had seen at 8 A.M., as our reckoning now placed us in about the same position

This shoal we place in lat. 11° 38′ N., long. 114° 40′ E. or about N. 60° E. 22′, from the northernmost dangers of Horsburgh, which he says are islands, so that this shoal is very dangerous—the position here given may be assumed as pretty nearly correct. Our chronometers appeared right, leaving Macao August 23rd, and off the Paracels (Bombay Shoal) September 4th.

I may also observe that, on September 17th, we passed over the position of the George and Abercromby Shoal as placed on Horsburgh's chart, corrected to 1846—and the same day passed between the *Seahorse breakers* and the *Luconia breakers*, both of which we saw from the masthead—we passed over one shoal patch about three miles to the west of the *Seahorse breakers*, on which we had 9 fathoms, and between these two shoals we saw several shoal patches, but avoided passing over any of them. These two shoals appeared pretty correctly placed on the chart according to our observation. We arrived at Labuan on the 19th and found there the surveying ship *Royalist* and H.C.S. *Pluto*.

I have further to report that when leaving Labuan, on Sunday, October 12th, the *Trident* grounded on a knoll of light-coloured sand, near where 9 fathoms is placed on the Admiralty chart of Labuan, by Captains Bethune and Belcher, R.N. The following are the bearings from where the ship lay aground:—

Kim Sam point or S.W. end of Labuan,	W.b.N.¼N.
Point Enoe (point Papaan of Belcher)	N.E.b.N.
Point Papaan (point Daat of Belcher)	N.E.b.E½E.

The ship was drawing nearly seventeen feet water, we grounded at about 2h. 30m. P.M. and hove off about 9 P.M. The ebb tide setting to the north-west and the flood to the south-east it appeared to be low-water about 5 P.M.—After grounding the tide left us about a foot.

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We sounded round the ship and found the shoal of small extent, not more than 400 feet from east to west and 200 feet from north to south, having 7 and 8 fathoms all round. Muddy bottom—the shoal water sandy bottom, and the best water 9 feet.

The flag-staff was shut in behind Point Enoe and Point Burong well open to the north of Point Karaman. The names of some of the islands are changed in the new sailing directions for Labuan, drawn up by Mr. W. B. Calver, R.N., from those given by Captain Belcher.

I am, &c., J. LYALL.

Copy from the barque Trident's Log-book.

Barque Trident from Labuan to Singapore, [civil date.]

H	Winds	Str	Wr.	Bar.	A	W	Remarks, Sunday October 12th, 1851.
1	0	0	b.c.p	29·97	83	84	A.M., calm, at anchor off Victoria Harbour, Labuan
2	0	0	c.p.				
3	0	0	b.c.				
4	0	0	b.c.	29·97	83	84	
5	0	0	b.				c. 7, hove up anchor, made sail with light breeze
6	0	0	b.				to the southward.
7	S.S.E.	1·2	b.				c. 10, hove to, Pt. Papaan (or pt. Daat of Belcher)
8	„	1·2	b.	29·95	87	85	NNE. dis. 1 m., when Mr. F. Motley, pilot left
9	„	2·3	b.				ship, made sl. stod. S W., sound. 9 to 7½ fath.
10	„	2	b.				Noon, calm & smooth wat. found tide set. to north.
11	„	1	b.				came to in 7½ fath., Pt. Enoe bearing N.E.¼N.
12	0	0	b.	29·96	90	85	and Pt. Burong open N. of Pt. Kuraman.
1	0	0	b.				c. 2 P.M. boarded by Capt. Tavenor & Mr. Cochran,
2	WNW	1·2	b.				Labuan, up anchor, stood S.¼W., lt. breeze
3	„	2·3	b.				N.N.W., soundings in 8 and 7½ fathoms.
4	„	2·3	b.	29·96	88	85	c. 2h. 45m., the water shoaled suddenly to 4½ fath.
5	„	2·3	b.				next cast 3½, and the ship grounded on a
6	N.W.	2·3	b.				Knoll of light sand, none such being marked
7	„	2·3	b.c.				on the Admiralty chart of Labuan, hauled
8	WNW	2	b.c.l.	29·96	85	85	down the jibs, and hove all back, got the str.
9	„	1·2	b.c.l.				anchor out astern to heave the ship off, but
10	„	1·2	b.c.l.				the tide ebbing the water left the ship about
11	„	1	b.c.				one foot, furled the sails, the ship listed over
12	0	0	b.	29·95	85	85	a little to port. The captain, with Captain
							Tavenor and Mr. Cochrane, sounded round
							the ship. From where the ship lay aground
							the west end of Labuan, bore W.b.N.¼N., Pt.
							Enoe N.E.b.N., Pt. Papaan N.E.b.E.½E., and
							Pt. Burong well open to the N. of Pt. Kuraman
							carpenter sound, the pumps every hour, ship
							making little water; at 8 P.M. the tide rising,
							commenced to heave off, the ship thumped
							lightly, c. 9h. 30m. hove afloat, and at 10 came
							to in 10 fath. with 30 fath. on the bower cable.
							Carpenter attending to the pumps.

Singapore, November 4th, 1851.

MR. EDITOR.—I have been induced to forward you the accompanying tabular abstracts of our passages &c., together with some remarks on the passage from the south-east trade, in the Atlantic, to the south-east trade in the Indian Ocean, in the hope that they may be found of some utility by some one in their weather investigations, even although they may be all, considered by you of far too prolix and trivial a nature, to merit a place in your very valuable *Magazine*, and if you should consider any of the statements or remarks of sufficient interest to warrant their insertion in the *Nautical*, one of my most

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valued companions, they are placed at your disposal, if not there is no harm done. I have been the more inclined to forward all the enclosed, from an oft repeated observation in your *Magazine*, "There cannot be too many *facts* recorded."

No. 1.—A table of a passage to Valparaiso from Liverpool, in 1849 and 1850.

No. 2.—Abstract of the table of a passage from Liverpool to Batavia in 1850 and 1851.

No. 3.—Extracts from remark book, on the passage round the Cape of Good Hope, and to the eastward of the Islands of Amsterdam and St. Pauls, with copy of one day's log, March 10th.

No. 4.—Sketch of a shoal on which we grounded leaving Labuan, and a copy from our registry during the time of an expected Typhoon at Hong-Kong.

No. 5.—Copy of report to the "*Singapore Free Press*," and copy of the log on the day we grounded on the shoal.

There has been severe weather in the China Sea on the 24th September and 1st October, as various reports will show, in about 13° north.

I am, &c.,

To the Editor, N.M. JOHN LYALL.

APALACHICOLA, Jan. 1, 1852.—The following lighthouses have been entirely swept away during a severe gale, and it is probable they will not be replaced under nine months or one year. No light-ship or temporary light has as yet been substituted in place of either of them. Dog Island was situated in lat. 29° 46′ N., long. 84° 44′ W. Cape St. George, lat. 29° 35′ N., long. 85° 5′ W. Cape San Bas, lat. 29° 38′ N., long. 85° 27′ W.

An official notice states that a lighthouse has been erected in South Australia, at Cape Willoughby, on the south side of Kangaroo, at the entrance of Backstair's passage into Gulf St. Vincent. This light will be called the "Stur Light," and will guide the mariner from the neighbouring colonies eastward of Adelaide. It is a revolving light, and situated in lat. 35° 50′ 37″ long. 138° 8′ E., elevation base 179 feet, stone capping sixty-two, total 241 feet and is visible at sea eight leagues.

The lighthouse was erected ready to receive the lantern on its arrival, which was sent from this country in July last by the ship *Benjamin Elkin*.—*Daily News*.

PASSAGES:—*Pacific*.

MR. EDITOR.—I herewith send you the following journal of a passage from Panama to San Francisco and from thence to Singapore, touching at Honolulu (S.I.), for publication in the *Nautical*, should you deem it worthy of a place in that valuable work, which I think next to our invaluable friend Horsburgh, the best Nautical publication of the day for information with regard to shoals, winds, &c. I have been enabled through it, to lay several dangers down in my charts, which otherwise I should have been entirely ignorant of, and think the work ought to form a part of every ship-masters' library, and should like to see more remarks in it from that body. I have found them of great service in making passages where I have not been before, particularly this voyage, from the remarks of an old experienced hand in your vol. for 1848; likewise the remarks on the Caroline Group.—Vol. 1849.

I have merely added the passage from Singapore to Calcutta to shew the detention there is sometimes in the Straits of Malacca. Hoping the remarks may prove beneficial to some of your nautical readers.

I remain, &c.,

Calcutta, 18th October, 1851. A CONSTANT READER.

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Abstract of a Passage of the barque Walter Morrice, from Panama (Taboga) to San Francisco—Upper California, 11th February to 20th March: 37 days.

4 P.M., anchor up: stood out between Urava and Farallon.

Day.	Wind.	W.	Bar.	Sym.	T.	Latitude. DR.	Latitude. Obs.	Longitude. D. R.	Longitude. Chr.	Course and distan. made.	Remarks.
Feb.	N.		29·56		82		7 6		79 55		Ld. N.W. 18′ cur. S. 18′ str. from Taboga, under all staysails.
12	N.	f.	29·53	29·60	84		4 42		81 24	S. 31½ W. 169	
	N.E.					° ′		° ′		° ′	
13	N.E.	f.	29·52	29 62	85	3 52		83 18		S. 66½ W. 124	Current S. 67° W. 50′
14	Variable	q.r.									
	N. to E.	q.r.	29·51	29·60	83	2 45		85 57		S. 67½ W. 122	
	S.E.	lt.									
15	S.S.E.	f.	29·52	29·60	84		2 44		89 12	West 195	Cur. N. 70° W. 58′
16	S.S E.	f.	29·52	29·60	84		2 40		91 27	S. 88 W. 135	Cur. N. 59° W. 25′
	Variable	r.									
17	S.S.E.	f.	29·53	29·65	80	2 6		92 52		S. 70 W. 97	Current N. 80 W. 116′
	Variable										
	E. to N.E	q.r.									
18	Variable	r.	29 52	29·60	82		2 14		96 44	S. 84 W. 113	
	S.S.E	f.									
19	S.E.	f.	29·50	29·61	81		2 19		99 38	N. 88 W. 174	Cur. N. 76 W. 64′ heavy N.W. swell
	S.	q.r.									
20	S.S.W.		29·54	29·62	82		2 44		101 36	N. 78 W. 121	Cur. N. 66 W. 46′
	to S.E.										
21	S.S.E. to		29·52	29.57	85		3 9		102 55	N. 72½ W. 83	Cur. N. 56 W. 18′
	Calm.										
22	S.E.		29·50	29.55	86		34 9		103 39	N. 47 W. 60	Cur. N. 79 W. 16′
	N.W. to										
	N.E.										
23	Variable	r.	29·49	29·56	83		4 9		104 7	N. 54 W. 3¼	
	Calm.										
24	E.N.E.		29·47	29·55	84		5 12		104 53	N. 37 W. 79	
	S.E.b.E.	f.									
25	S.E.	c.r.	29·50	29·57	80		5 38		105 6	N. 22½ W. 28	
26	S.S.E.										
	N.E	r.	29·53	29·61	85		6 52		105 44	N. 27 W. 83	
27	Calm		29·53	29·61	83		7 59		107 20	N. 55 W. 117	Cur. S. 43 W. 22′
	N.N.E.	4	P.M. f	ound	th	e Tr	ades	from	N.NE.	in a squall wit	h rain at sunt. fine
28	N.N.E.	f.	29·51	29·60	84		9 36		110·11	N. 60½ W. 196	Cur. S. 84½ W. 81′ hvy. sw. & light. from W. to N.E.
Mar.											
1	N.N.E.	f.	29·53	29.65	82		11 26		112 34	N. 52 W. 178	Cur. N. 75 W. 42′ hvy. NW. swell.
2	N.N.E.	f.	29·52	29·63	81		12 56		114 51	N. 56 W. 162	Cur. S. 67 W. 41′
3	N.N.E.	f.	29·56	29·67	78		14 14		116 42	N. 54 W. 133	Cur. S. 71 W. 25′
4	N.N.L.	f.	29·57	29·70	78		15 15		118 25	N. 44 W. 141	Cur. West 40′
	N.b.E.	o.	29·62	29·75	73		17 7		120 22	N. 57½ W. 133	Current West 22′
5		q.									
6	N.b.N.	o.	29·66	29·80	73		18 49		121 57	N. 41½ W. 137	Current West 20′ head sea.
		q.									
7	N.N.E.		29·68	29·80	72		20 23		123 39	N. 44½ W. 134	Current West 27′
	to N.E.										

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Day	Wind.	W.	Bar.	Sym.	T.	Latitude. DR	Obs.	Longitude. D. R.	Chr.	Course and distan. made.	Remarks.
							° ′		° ′	° ′	
8	N.N.E. to N.E.	f.	29·71	29·83	71		22 13		125 9	N. 37 W. 138	Current West 24′
9	N.E.b.N.	o.	29·77	29·87	71		23 51		126 28	N. 36½ W. 122	Current West 20′
10	N. to N.N.E.	f. o.	29·82	29·96	69		24 41		127 48	N. 55½ W. 89	Current West 24′
11	N.N.E. N.E.	o.	29·83	29·96	66		26 14		129 15	N. 40 W. 122	Current West 12′
12	N.	o. r.	29·97	30·10	69		27 28		131 10	N. 54½ W. 126	Current West 13′
13	N.N.E.	o. q r.	30·02	30·13	66		28 54		133 4	N. 49½ W. 132	Current West 20′
14	N.N.E.		30.05	90·13	66		30 32		135 4	N. 46½ W. 143	Current West 30′
15	N.N.E. to E.	o.	29·98	30·05	67		31 42		135 38	N. 23 W. 72	Heavy sea.
16	E. to S.E		29 66	22·79	66		33 14		134 28	N. 30½ E. 107	
17	S.W. N.W.	r. q.r. f.	29 55	29·60	60		35 3		131 57	N. 49 E. 165	
18	S.W. S.W. S.W.		29·64	29·60	59		36 22		129 0	N. 61 E. 164	
19	N.W.	q. r.	29·57	29·58	59		37 39		126 3	N. 61½ E. 161	
20											arrived

Remarks on making the Passage from Panama to San Francisco.

Before leaving Panama, I made enquiries, and found that vessels which kept the coast on board all the way, were generally three months on the passage, therefore adopted the route recommended to me, viz:—steering to the south until in the south-east trades, if found steady to the northward of the Galapagos it will be better to proceed north of that group, but if light and variable proceed south of them, and do not endeavour to make any northing until in about long. 100° or 105° W. I was advised to make Cape St. Lucas if practicable, (although I do not see the utility of it), and should the wind hang to the north-west after leaving the north-east Trades, reach to the westward, until you can head up on the larboard tack for your port, but on no account endeavour to work along shore with a north-west wind, as the current I understand runs strong to the southward in the season when north-west winds prevail, viz:—from March to November, the other season an inshore passage might be made when south-east gales occur at times, and wind frequently from the south-eastward.

[On the subject of passages in the Pacific Ocean, we recommend our correspondent to consult the excellent notices of the late Captain Basil Hall in his work entitled "*Extracts from a Journal, &c.*," and which have been transferred to a memoir on the navigation of the Pacific, long since published by the Admiralty. In our last volume will be found some excellent remarks on the prevailing winds of the Pacific Ocean by Commander Wood, R.N., of H.M.S. Pandora, whose close observation and experience as a scientific Seaman entitle them to entire confidence.

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Abstract of a Passage of the Barque Walter Morrice, from San Francisco to the Sandwich Islands, June 18th, 16 days.

June. Day.	Wind.	W.	Bar.	Sym.	T.	Latitude. D R.	Obs.	Long. Chron	Course and distan. made.		Remarks.
						° ′		° ′			
3	W.		29·80	29·80	61	35 37		124 56			
	W.N.W.						° ′		° ′		
4	W.b.N.		29·77	29·80	66		30 24	127 16	S. 36 W. 174	South	
	W b.S.										
5	N.W.		29·78	29·83	68		30 32	130 20	S. 54½ W. 193		Var. 11° E.
6	N.N.W.		29·70	29·77	69		28 58	132 48	S. 54 W. 159		Var. 11° E.
	N.									′	
7	W. and		29·67	29·75	70		26 50	133 6	S. 7 W. 129	S. 20	
	W.S.W.										
8	W.		29·74	29·80	77		25 51	133 19	S. 11 W. 60	S. 12	Var. 11° E.
9	Easterly		29 88	29·87	75		25 39	133 40	S. 57½ W. 23		Var. 11° E.
10	S.E. to		29·78	29·85	74		25 31	134 56	S. 85 W. 69		Var. 11° E.,
	N.E.										7 P.M. a sail
											S.W. stdg N.W.
11	E.S.E.		29·74	29·77	72		25 10	136 52	S. 78 W. 107		
12	E.		29 67	29·75	73		24 52	138 36	S 79 W. 96	W. 24	Var. 11° E.
	S.E.	qr.									
13	S.	qr.	29·64	29·76	76		24 18	142 15	S. 80½ W. 203	W. 24	
	S.S.E.										
14	S.E.	f.	29·70	29·80	79		23 59	146 6	S. 85 W. 210	W. 24	
15	S.E.	f.	29·76	29·83	80		23 7	149 43	S. 75 W. 206		
16	E.S.E.	f.	29·73	29·80	80		22 12	152 36	S. 73 W. 187		Var. 11° E.
	E N.E.										
17	E.N.E.	f.	29·70		78		21 42	155 48	S. 79½ W. 160		At 10 A.M.
		qr.									sn. Owhyhee
18											S.b.W. 80′.

Remained at the Port of Honolulu, Island of Waohoo nine days, during which time had a constant north-east trade, and fine weather with the exception of one evening, on which heavy rain occurred. The north-east trades prevail the greater part of the year, but southerly winds and gales prevail from November to April.

Great difficulty in procuring hands, the government not allowing the natives to ship; those which had been allowed to go in ships previously having been ill-used and turned adrift without wages in Foreign countries, on which account no native is allowed to leave in any ship except government vessels, Whalers and Hudson Bay Company's vessels, it being said those are the only vessels that have fulfilled the contract of paying their wages and returning them to the Islands. It is too bad of ships not carrying out their contract, as many others as well as myself will suffer from it. I laid several days waiting for hands, and at last was compelled to give eighty dollars for the run to Singapore, and left several vessels wanting hands and make not the least doubt, but they will have to pay much higher than I did. I had several natives working on board who wished to join me, but I was not allowed to take them. I therefore left, counting in all nineteen hands, and considered myself fortunate in getting away as I had done, although not without enticing Jack a little, and putting up with a little more from them than I should have done in most other parts.

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Casualties in Captain Collinson's Behring Strait Expedition.

It is with great regret that we have to announce the following lamentable casualties in the *Enterprize*, Captain Collinson, C.B. We copy the account from the *Times*.

On the 16th inst., we mentioned that H.M.S. *Dædalus*, Captain Wellesley, had reached San Francisco on the 22nd of October from Behring Strait, which she left on the 1st of that month. By that ship information was received that the *Plover*, Commander Moore, had passed the winter in Grantley Harbour. The crew of the latter had suffered a good deal from scurvy, but no lives were lost, and a great number of the crew were removed, and replaced by volunteers from the *Dædalus*. We now learn that the *Enterprize*, which rejoined the *Plover* on the 3rd of July, was less fortunate, having lost two officers, Lieutenant J. Barnard and Mr. Whitehead, clerk in charge. Lieutenant Barnard and Mr. E. Adams, assistant-surgeon of the *Enterprize*, had been left at Michaelowski, the Russian trading post in Norton Bay, in October last, for the purpose of collecting information of the missing expedition from the Russian posts and from the natives inland. In pursuance of this object, Lieutenant Barnard, with an interpreter, had gone early in January, to a distant post, intending to communicate if possible, with some of the neighbouring chiefs. During the night the post was surrounded by a large body of Ko-yu-kuk Indians, several of whom at daybreak entered the principal dwelling and killed the Russian Governor. Lieutenant Barnard and the interpreter, who were in the same house, made such resistance as drove the Indians out of the house. They then lay siege to the post, sheltering themselves behind wooden shields, stuck upright in the snow, but one of them being soon afterwards shot, the whole party retired to an Esquimaux village at some distance, where they committed great cruelties, killing upwards of sixty natives, including women and children. Lieutenant Barnard died of his wounds on the afternoon of the day following the attack. Mr. Adams, on hearing of the event at Michaelowski, proceeded with a number of Russians to the distant post, where he saw the body of his late companion, in which were numerous wounds, the principal one being in the abdomen, and of such an extent as to have proved inevitably fatal. Mr. Whitehead's death took place on board the *Enterprize*, while on her passage from Hong-Kong to Port Clarence.

Museum of Practical Geology: London.—We understand that officers of the Army and Navy, as well as those of the Honourable East India Service, are admitted to the Lectures of the Museum of Practical Geology, in Jermyn Street, at half the usual charge of admission.

Five Boats in the Place of One.—*Berthon's Boats.*

It will be readily admitted that a superabundance of boats and still better of life-boats, is a most desirable thing for every sea-going vessel.

But the question is, *where and how are so many life-boats to be stowed?* For instance an emigrant ship with 500 passengers, where is she to carry enough life-boats to save so large a number from wreck, or that still more terrible calamity, fire, which has been so very frequent of late with this class of vessels?

The above question is satisfactorily solved by the life-boats recently invented and fairly tried by the Rev. E. L. Berthon. A full description of these boats with drawings will be given in another number.

At present we confine ourselves to a brief and general notice of their construction. &c.

They combine instantaneous collapsibility and expansion, with enormous strength.

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The very largest boat ever carried by a first class ship will shut itself into little more than two feet, and being always under the davits is ready to lower at any moment.

When in the water they are most perfect life-boats, with rowing and sailing powers second to none.

The expense is moderate—weight very small.

The position in which these boats are carried, viz:—outside the bulwarks and not rising above them, renders them safe from destruction by fire, an event which added so much to the fatal result of the burning of the *Amazon*.

As a proof of the strength of these boats, it may be stated that a twenty-one foot boat placed upon two blocks at the stem and stern out of the water does not bend the smallest portion of an inch, even when filled with men.

THE HARBOUR OF NEWCASTLE.—Although the harbour is not so easy of access as it is desirable it should be, ships when once within its precincts are perfectly secure by reason of the shelter and protection afforded by the "breakwater." It has lately been surveyed at the private expense of the Port Master, Captain Livingstone, and from the chart laid down by the surveyor, Captain Peters, it would appear that vessels of almost any tonnage might enter, and find good anchorage in sand and mud. Large ships, it is true, cannot take in entire cargoes under the Company's staith, or at Donaldson's Wharf. Twelve feet is found on the bar of the coal channel at low, and seventeen and a half high water spring tides; but within such narrow limits that it is not considered generally safe to take vessels over, when drawing more than fourteen to fourteen feet and a half, the slightest diverge from the centre of the channel bringing a vessel at once into nine and fourteen feet and a half, in the respective states of the tide above mentioned. The rise of tide is five feet and a half full and change. This obstruction obliges some vessels to load partly in the stream by the aid of lighters, an inconvenience that might, and probably will, be remedied, by the Company running a shoot across the channel into deep water.

There is as yet no lighthouse here, but in lieu thereof, a beacon fire light is maintained during every night at the signal station. Taken at the flagstaff the latitude given on the chart is 32° 56′ south, longitude 151° 44′ 15″ east. The leading winds are south-east to south-west inwards, north-west to north-east outwards. An excellent wharf running east from the Queen's Wharf has been constructed with ballast discharged from coasting and other vessels, and others are in course of formation of the same material, to be run in the contrary direction. When completed, much valuable ground will be reclaimed from the water.—*Sydney Paper*.

NEW CHARTS AND BOOKS.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry.

		s.	d.
ENGLAND, THAMES RIVER,	sheets No. 1, 2, and 3, corrected to 1851, by *Capt. Bullock, R.N.*, each	3	0
„	LOWESTOFT ROADS, corrected to 1852, *Capt. Bullock, R.N.*	0	6
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WEST INDIES, BAHAMAS, Wide opening, *Capt. Barnett, R.N.*, 1838, - 0 6
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EDWARD DUNSTERVILLE, *Master, R.N.*

Hydrographic Office, November 20th, 1851.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory, From the 21st of December, 1851, to the 20th of January, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter		Wind. Strength		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min	Max	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
		In Dec	In Dec	°	°	°	°						
21	Su.	29·81	29·62	48	45	44	48	SW	SW	5	4	qop 2)	bcp 3
22	M.	29·55	29·56	45	43	41	47	SE	NW	1	3	or (2)	ogr 3 4
23	Tu.	30·10	30·20	39	41	38	43	N	N	3	3	bc	bc
24	W.	30·31	30·32	38	38	36	42	E	E	1	1	bc	bc
25	Th.	30·36	30·36	35	36	31	37	NW	NW	1	1	bcm	bcm
26	F.	30·50	30·52	32	35	25	38	SE	E	1	1	bc	bc
27	S.	30·48	30·42	29	35	24	36	NW	NW	2	2	o	o
28	Su.	30·32	30·40	38	38	33	41	NE	NE	2	3	bcp (1)	bcp 3 4
29	M.	30·52	30 52	35	39	33	41	NE	NE	1	1	bc	o
30	Tu.	30·49	30·46	37	39	36	42	SW	SW	1	1	o	bc
31	W.	30 29	30·20	34	35	28	38	S	SW	1	2	o	o
1	Th.	29·92	29·86	33	34	32	35	W	W	1	2	og	o
2	F.	29·68	29·64	34	38	28	39	SW	SW	1	1	o	bc
3	S.	29·74	29·68	35	42	33	45	SW	SW	1	5	bcp (1	qbc
4	Su.	29·62	29 84	41	41	40	42	W	NW	8	4	qbcp (1	bc
5	M.	30·20	30·14	32	43	27	44	SW	SW	2	2	o	bc
6	Tu.	29·93	29·79	36	44	34	45	S	S	2	4	b	bc
7	W.	29·55	29·69	48	46	37	49	SW	W	6	5	qop 1) (2	qbc
8	Th.	29·88	29·61	41	47	35	48	S	S	5	5	qbc	qbcp 4
9	F.	29·15	29·24	35	38	33	39	W	W	6	7	qb	qbcps 2
10	S.	29·68	29·72	30	37	29	39	W	W	2	2	b	b
11	Su.	29·06	29·12	48	48	31	51	SW	SW	5	3	qbcp 1	bcp 3 4
12	M.	29·30	29·06	48	50	44	52	SW	S	4	3	or 2	or 3 4
13	Tu.	29·50	29 53	38	41	37	48	NE	E	2	2	or 1 2	or 3 4
14	W.	29·74	29·78	46	50	44	52	SW	SW	1	1	bc	bc
15	Th.	29·60	29·62	51	52	44	54	SW	SW	5	4	qor 1 2	bcp 4
16	F.	29·78	29·88	46	50	44	52	SW	SW	2	2	bc	bc
17	S.	30·01	30·11	42	46	40	48	NW	NW	2	3	bcp 1	bm
18	Su.	30·38	30·32	35	42	32	43	SW	SW	2	2	bc	bc
19	M.	30·18	30·08	36	43	30	45	S	S	2	4	b	b
20	Tu.	29·80	29·68	46	48	35	49	S	S	4	4	od 2	or 4

December, 1851.—Mean height of the barometer = 30·258 Inches; mean temperature = 40·0 degrees; depth of rain fallen = 0 69 inches.

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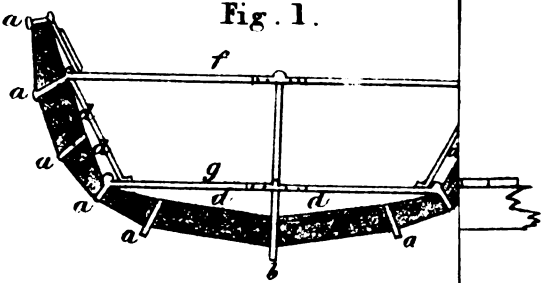
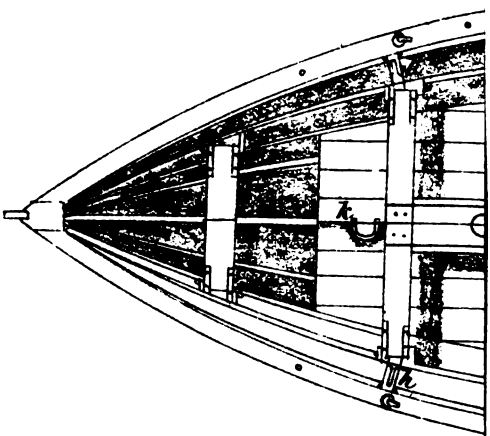
THE FAREHAM LIF

Fig. 1.





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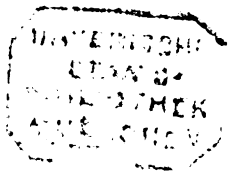

THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

MARCH, 1852.

Report on Sable Island, in the Atlantic Ocean.—*By Captain H. W. Bayfield, R.N.*

Sable Island was discovered very early in the sixteenth century, and although the strong and irregular currents around its formidable sand-bars, together with the prevalent fogs, soon made it the dread of navigators, it appears nevertheless, to have been not unfrequently visited, in those early times, by the Portuguese, French, and English fishermen. Cattle and swine are said to have been landed there by the Baron de Lery in 1518, and by the Portuguese in 1553.

The first of these reports wants confirmation: the second was so far credited, that it induced Sir Humphrey Gilbert to visit the island in 1583, in the hope of obtaining supplies. He, however, found no cattle on the island, and having lost one of his three vessels on its dangerous bars, he sailed for England with the other two. But this distinguished half brother of Sir Walter Raleigh, celebrated for the virtues of public and private life, was destined never again to behold the land of his birth; for his vessel, the *Squirrel*,* foundered in a violent storm which she encountered on the passage home, and all on board perished!

* This voyage is full of interest, from the circumstance of Newfoundland being taken possession of, the discovery that was made by it, and the fatal events by which it was attended. The ships arrived at Penguin, (now Fogo,) Island, and went on to Conception Bay, and afterwards to St. John Bay. Sir

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In 1598, the Marquis de la Roche landed forty convicts on the island, of whom twelve only were found alive at the end of seven years, when a vessel was sent to bring them back to France. Although the total wreck of a French ship supplied them with some provisions, and also with the materials for the huts that prevented them from perishing from want of shelter in the first winter, yet twenty-eight of these miserable people appeared to have perished from the difficulty of subsisting so large a company upon the walrus, seals, fish, and berries, which formed their only food, and which it must often have been exceedingly difficult to procure. If therefore, the reports of cattle having been previously landed on the island be true, they must have been exterminated before these unfortunate people arrived there. It is, however, certain that they were introduced very soon afterwards, and that they multiplied exceedingly, for in 1635, the number of horned cattle on the island, was estimated at eight hundred head.

It is said, that the island was several times stocked with cattle, as a humane provision for the shipwrecked, but that notwithstanding their rapid increase, the danger of remaining long near the island, and latterly a proclamation of the Governor of Nova Scotia forbidding them to be killed, they were as often extirpated by unprincipled persons who hunted them for their hides and tallow. At last they were replaced by the present race of wild horses, but when, or by whom, designedly or accidentally from wrecks, is not known. Haliburton, from whose interesting history of Nova Scotia I have drawn most of the foregoing particulars, states, that there was for many years "a small herd of wild hogs on the island, which became exceedingly fierce, but that the climate which had always restricted their increase, finally overcame them altogether, the whole having perished during an unusually severe winter. It is also stated, that these creatures, from their occasionally feeding on the dead bodies that came on shore from wrecks, were regarded with the utmost horror

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Humphrey Gilbert took possession of Newfoundland, and received presents from all the vessels he found there, particularly those of the Portuguese. Mutiny and sickness broke out in his fleet, while in St. John Bay, by which many were lost. He sailed in search of Sablon (Sable) Island, on which he was told that the Portuguese had landed cattle thirty years previously. His ship struck on a sand-bank, (probably off Sable Island) and several of her crew were lost. The admiral was saved, and went on board a small vessel of his fleet, (the *Squirrel* of ten tons!) and shaped his course for England. But, having passed the Azores in September, they were overtaken by a storm; and the small vessel, in which the admiral embarked, foundered, with all on board. Mr. Barrow, in his valuable Chronological History of Voyages into the Arctic Regions, quotes the following passage concerning Sir Humphrey Gilbert, from Prince's Worthies of Devon. "He was an excellent hydrographer, and no less skilful mathematician; of an high and daring spirit, though not equally favoured of fortune; yet the large volume of his virtues may be read in his noble enterprises; the great design whereof was to discover the remote countries of America, and to bring off those savages from their diabolical superstitions to the embracing the gospel of our Lord and Saviour Christ; for which, his zeal deserves an eternal remembrance." The day before his vessel foundered, she having recovered from being nearly overwhelmed by a sea, Sir Hugh was seen sitting abaft, with a book in his hand, and was heard calling out to his crew, "Courage, my lads! we are as near to heaven by sea as by land!"

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and disgust, and that they were not replaced in consequence. In addition to the horses, English rabbits, and rats have been introduced, and have multiplied exceedingly. The rats which have come on shore from wrecks, feed upon the rabbits, and keep down their numbers; whilst they themselves perish in vast numbers from the climate during severe winters. They nevertheless remain so numerous as to be a serious inconvenience in winter, when they swarm about the houses and stores of the establishment.

There does not appear to have ever been any indigenous quadrupeds, —for the black foxes, that were formerly found on the island, and have long since disappeared, most probably came on shore originally from drift ice; several instances of bears and foxes having landed on the island from ice, having occurred in comparatively recent times; affording an interesting example of the mode in which species have been distributed, and conveyed to habitations apparently the most unlikely, notwithstanding the obstacle presented by a wide expanse of intervening sea. When we consider the number of such instances, that must have occurred in the course of many centuries, our surprise will probably be excited more by the paucity of animal life on an island of such extent, and affording such ample means of subsistence, at the time of its discovery, than it would have been by its abundance, did we not perceive in the absence of rocks and trees, the want of that shelter from the climate, and from natural enemies, which would be indispensable for the preservation of many species. From the commencement of the sixteenth century to this day, shipwrecks appear to have been frequent on this island, for at that early period of American History, the valuable and extensive fisheries, the fur trade with the Indians, the desire to introduce the gospel and to form settlements in the new world, seem all to have combined in promoting that spirit of enterprize and love of adventure so characteristic of the age.

Hence, numerous voyages were undertaken, many of which were to various parts of Breton Island, Nova Scotia, and the Gulf of St. Lawrence. Canseau, now Canso Harbour, seems from the first to have been much frequented, especially by the French;—doubtless so also was the Passage de Fonsac, now the Gut of Canso:—and Sable Island, with its formidable long bars, lies directly in the way of vessels passing between those places, and the ports of Europe and Newfoundland.

In the following century the island appears to have been much frequented by the New England and French fishermen, for walrus, as well as seals and fish. The walrus, whose teeth were exceedingly valuable, are now seldom seen; but seals still visit the island periodically in considerable numbers, and are taken by the people of the establishment. As the trade between Europe and the American colonies increased, so also did the number of shipwrecks, until at last Sable Island became the terror of seamen. The trade of Nova Scotia suffered so greatly, that, in 1801, measures were adopted by the Government and Legislature of that colony for the relief and removal of shipwrecked persons, and for preventing the plunder of the wrecks. Hence the origin of the present humane establishment, so creditable to the colony; and for the support of

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which the British Government has borne an equal share of the expense, since 1827. The necessity for such an establishment will appear evident, if we try to imagine the dreadful misery, which must have been repeatedly endured by the shipwrecked, during the many dreary winters of the three intervening centuries, from the discovery of the island to the formation of this provision for the unfortunate. Many fatal shipwrecks occurred, during that long period, of which no record was left but the bones of the lost! These are exposed to view from time to time, by the action of the winds and waves upon the loose sand, of which the island is composed. A dreadful example of this is recorded in the *Nautical Magazine* for 1842,* wherein is related the discovery of the remains of a part of the 43rd regiment, under Major Elliott, which, together with the huts they had constructed out of the wreck, had been buried under the sand hills for nearly a century. The transport in which they had embarked was never heard of until this discovery, and was supposed to have foundered at sea.

The average number of wrecks on the island for some years past has been about two each year; but the superintendant informed me, that this conveys but an inadequate idea of the loss of life and property; for there is frequent evidence of the loss of vessels on the long bars, after a long continuance of foggy weather. Of these unknown vessels the only records are the fresh fragments of the wreck and cargo, or the drowned bodies of the crew.

The position of Sable Island was first determined with any pretension to accuracy, by Admiral Sir Charles Ogle's officers, (Messrs. Jones and Jauncey,) in 1828, and the Admiralty charts, were corrected accordingly. The correction however, seems not to have been generally adopted, and the discrepencies, amounting to upwards of twenty miles of longitude, between the corrected and uncorrected charts, seems to have added in some cases to the just apprehension with which the island has been regarded.

Hence it became desirable to verify its position, and the result of our observations for that purpose is as follows:—

	Latitude North.			Longitude West.		
	°	′	″	°	′	″
The west flagstaff near the principal establishment	43	56	82	60	3	19
The west extreme of the Grassy Sandhills	43	56	52	60	9	00
The north-east extreme of the Grassy Sandhills	43	59	05	59	46	0·15

* *Times, September 17th*, 1842.—The Halifax Papers published the following singular discovery:—"The following facts have been made known to us by a gentleman of this city, who has had his information from the best authority—viz, Capt. Darby, sen., Governor (as he is called) of Sable Island. For the last twenty-five or thirty years there has been a large mound or pyramid of sand, about 100 feet high, on the island, and not very far from the residence of Captain Darby. The winds for some years have been gradually diminishing its height, and after a severe blow some weeks since it was completely blown away, and, singular to say, a number of small houses, built of the timbers and planks

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The longitude is here given under the assumption, that Halifax tablet in dock-yard, is in 63° 35′ 19·5″ W., and will be subject to any correction to which the latter may hereafter be found liable. The latitude *may be* 10″ too far north, that being the usual error of the instrument, when observing the sun or stars to the southward, but this is of no importance to seamen.

The position above given, is substantially the same as that of Sir Charles Ogle's officers, the only material difference being in the west extreme of the Grassy Sandhills, which was found to be 2′ 18″ long. further east from Halifax Dock-yard observatory; showing an average annual diminution in the length of the island, of 0·1 of longitude, or 73 fathoms of distance, during the twenty-three years from 1828 to 1851.

This confirms the statements of Captain Darby and Mr. M'Kenna, the former and present superintendant concerning the continual washing away of the west end of the island, of which a remarkable instance is related by Captain Darby, to have occurred in 1811, and recorded in the *Nautical Magazine* for 1838.*

There appears to have been no change whatever in the north-east end of the island since 1828; nor any material change, according to the statements of Captain Darby, and the people on the island, since the commencement of the present century. Further back all is conjecture, the island being then without inhabitants, and its position undetermined.

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of a vessel, were quite visible. On examination they were found to contain a number of articles of furniture and stores, put up in boxes, which were marked '43d Regiment;' the boxes or cases were perfectly rotten, and would not admit of their being removed. A brass dog-collar was, however, discovered by Captain Darby, with the name of 'Major Elliot, 43d Regiment,' on it, and which Captain Darby brought to the city, and presented to Major Tryon, who belongs to the 43d Reg."—*Halifax Herald.* Captain Darby has endorsed this announcement. Addressing the editor of the *Halifax Herald*, on Wednesday, he says, "The houses are appearing at the base of the hill, about two miles long and sixty or seventy feet high, lying parallel with the south coast of the island, the eastern end of which hill is about fifty-five feet high, covered with grass and other vegetation, about twenty-three above the level of the sea; these houses appear as the sands wear away with the action of the winds. There appeared at times numerous bullets of lead, a great number of military shoes, parts of bales of blankets and cloths, brass points of sword scabbards, bees'-wax, a small glass, convex on both sides, a copper halfpenny of George II., dated 1749, some military brass buckles, a great number of brass paper-pins, a very small dog's brass collar, with 'Major Elliott, 43d regiment,' engraved on it, numerous bones, some whole and some broken, with the scalp of hair and head dress of a young female, a piece of gold band. There are three buildings, which seem to have been constructed of the fragments of some ship; they are situate about ten feet apart, in a triangular form, and are ten to twelve feet square."

* We quote the passage alluded to here by Captain Bayfield, as it is not only an interesting trait in the history of the island, but also goes far to account for the difference in the positions of the extremes of Sable Island in different charts alluded to by a correspondent, T. F. F., in the *Nautical Magazine*, for November last, (p. 615), who will perceive that of the positions he quoted for it, Norie's chart is the nearest to Captain Bayfield's.—Ed.

On the 30th of September, 1811, there was a severe gale of wind from S.S.E., that washed away all of the dry part of north-west bar, extending four miles

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How long therefore, this irregular, yet constant waste of the island, at its west end has continued is unknown; but if it has continued during the whole of the three and a half centuries, that have elapsed since its discovery, the island must originally have extended beyond the extremity of the north-west bar, where there is now a depth of 10 fathoms of water, at the distance of seventeen miles from the present west extreme of the Grassy Sand-hills. Neither is this very improbable, for the north-west bar, is reported to have become longer of late years, in proportion as the island has been shortened.

The bars are said to be "travelling" to the northward, and the island to become annually narrower and higher; but there is no sufficient data either to prove or disprove these assertions in the absence of any regular survey of the island before the present year. If, however, we were to take the height of the Sandhills as usually stated, and compare it with the real elevation above the sea, we should be compelled to say that the island had become lower; but no reliance can be placed on such estimations, or rather they are almost always exaggerated.

Whether the present waste of the island be owing to any change in the currents, or to a gradual subsidence of the bank, of which the island is the summit, must at present therefore, be mere conjecture; but if the latter be the true cause, as seems by no means improbable, then the narrowing of the island would follow as a necessary consequence. The

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and a half north-west from the high part of the island, and half a mile broad. The greater part of it was covered with grass, and on the outer part of it was a hill elevated about twenty-five or thirty feet above the level of the sea, on which the rigging and sails of a brig that was wrecked there that summer were placed for safety; but these were all lost when it washed away. There is now, over the same extent of bar, four or five fathoms of water. The sea has been reducing the western end both since and before that time, at the rate of nearly one-sixth of a mile annual.

Easterly, southerly, and S.S.W. winds, set a rapid current along shore in shoal-water, to the W.N.W. and N.W.; that is, along the shore of the western end of the island, but not the eastern or middle, as there the current, with southerly and south-west winds, sets to the eastward. The natural tendency of the flood-tide is toward the coast. When it strikes the island, it flows to the eastward, over the north-east bank, and to the westward over the north-west bank, and passes the west end in a north-west direction, so rapidly that it carries the sand with it; and the hills of the west end being high and narrow, they are undermined at their base by it, and tumble down some thousands of tons of sand at a time. This, the current beneath catches, and sweeps away to the north-west, increasing the bank. As soon as this current passes the extreme point of the dry bar, it tends more across the bank to the north-east, the motion of the sea contributing to keep the sand in motion; the current carries it to the north-east, and spreads to the north-west. Although across the bank from the island, to the distance of fifteen or twenty miles to the north-west, there is a flood and ebb tide, the flood setting to the N.N.E., the ebb to the S.S.W., the flood comes over a broad flat bottom until it arrives at the highest ridge of the bar, bringing the sand with it so far. It then finds a deep water suddenly to the eastward of the bar, and its strength is as suddenly lost, the waters pitching over this bank settle gently in deep water, and the sand going with the current does the same, and keeps the eastern edge of the bar and the bank very steep; but to the southward and westward it is flat and shallow.

The ebb tide, setting gently to the southward and westward, meets the steep

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early navigators of the sixteenth century, were not remarkable for accurate or full descriptions. They have supplied us with no sufficient data to judge of such questions; but their casual and very general account of the island, would lead us to suppose a reduction of its length not improbable; whilst it indicates no observable difference in its nature or form, or in its position relatively to the neighbouring continent of Nova Scotia, from the nearest point of which, (White Head), it is distant about eighty-five miles.

Our trigonometrical survey will, however, supply all that is wanting, for estimating in future the annual waste of the island, in length, breadth or height; any changes that may take place in the position of the most remarkable Sandhills, in the opening, closing, or filling up of the long pond, and in the length and direction of the formidable long bars.

The present length of the island, from the extremities of the Grassy Sandhills at either end, is sixteen and two-thirds nautical miles in a direct line of true bearing, N. 82° 22′ E., and seventeen and a quarter nautical miles if we follow the curve of its shores. Its extreme breadth is exactly one mile. It is formed of two nearly parallel ridges of sand, shaped like a bow, and meeting in a point at either end. It is wholly or partially covered with grass for considerable spaces, in others scooped out by the winds into bare crater-shaped hollows; or hove up into sandhills, attaining the extreme elevation of seventy-five feet above

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side of the bank; and rising above it, passes over and increases in strength, merely levelling the sand that had been brought up by the last flood. It does not carry it back until the next flood comes, which brings up a fresh supply from the washing of the island; and so alternately the sand changes with every flood and ebb tide. The consequence is, that although the west end is several miles to the eastward of where it was in 1811; yet, the shoalest or eastern part of the bar or bank, has the same bearing from the dry land that it had then, which plainly shows that the bar and bank have increased eastward as fast as the island has decreased in the same direction. But the distance of the outer breakers has not increased more than about two miles. In 1829 their whole distance from the land being from ten to fourteen miles, in rough weather bearing north-west from the island. There is a passage across the bar inside, about four or five miles broad, with three or four fathoms of water. Since 1811, or about twenty-six years, an extent of four miles and a half of high land has been washed away, which averages rather better than one-sixth of a mile every year. In the last few years it is nearer to one-fourth of a mile every year, owing to the land being much narrower than it was the first fifteen years of the elapsed time. The whole of the island that does not wash away, grows in height; the most windy seasons cause the greatest elevation of parts where loose sand can be blown on to them; but the island in general grows smaller.

The eastern end of the island has not wasted much in length since my knowledge of it,—nearly thirty years. The high land (about a mile of it) has blown down with the wind, (but not washed down with the sea, as at the west end,) and now there is a low, bare, sandy beach, extending in a north-east direction from the high land about three miles. I think about one mile of this was high land, or sand hills, thirty years ago; the other two miles were formed by a low sandy beach, as at present: the elevated portion of the one mile of course has been blown into the sea, and gone to increase the shoal-water on the bar, being carried there by a strong flood-tide setting to the N.N.E. The bar itself extends from the dry part E.N.E., and at the distance of twelve or fourteen miles from the land, a very shoal spot, always breaks, except when dry, at which time seals may be observed lying on it. Between this spot and the land is a passage

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the sea at high water. Between these ridges a long pond, in some parts twelve feet deep, extends from the west end for a distance of eleven miles.

A low valley, in which are ponds of fresh water, continues from it for the remaining distance of six miles and a quarter, to the north-east end of the island.

The pond which is said to be gradually filling with blown sand, had formerly an entrance on the north side, that admitted small vessels; but the entrance has more generally been on the south side, where it has been closed since 1836, the sea flowing in over the low sandy beach only in high tides and heavy gales; as it does also at the west end.

The north-west bar is dry only three quarters of a mile out from the end of the Grassy Sandhills, but it has several patches of sand nearly dry, about a mile further out, and which are supposed to have collected around the remains of old wrecks.

The north-east bar is dry four miles out from the Grassy Sandhills; the sea washing over the outer half of that distance only in rough weather. At the distance of one mile and three-quarters out on this bar a sandhill, about ten feet high, and with some grass on it, has accumulated around the wreck of a vessel lost there in the year 1820.

It does not therefore, require many years to form one of those sandhills and clothe it with vegetation; they are still more easily dissipated by the fury of the tempest and the action of the waves. A single gale, as on the 30th September, 1811, has been sufficient to wash away and submerge several miles of the west end of the island, although for the most part covered with grass, and having near the extremity a sand hill twenty-five feet high.

If we add the dry parts of the bars to the length of the island as before stated, the whole extent of sand dry at present will be twenty-two nautical miles; and if again we add to this distance the still greater length of the bars under water at either end, the whole will form a bow

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about five or six miles wide, with from three to four fathoms of water on it. This bar and bank is also very steep on the north-western edge, and shallow and flat in the opposite direction. The bar travels to the northward slowly, the north-west bar travels to the northward and eastward rapidly. The variation of the compass, by amplitudes, on the 9th of February, 1837, was 20° 22′ west, and I think increasing.

The lake in the island fills up very fast, generally by sand blowing into it from all directions, and partially by the sea flowing over the south coast in many places in heavy weather, and conveying the sand with it. The improvements on the island have very much increased within the last few years. When the French frigate was cast away in 1822, the crew, all except the officers, had to cook and live in the little hollows and sheltered spots about the island, for the want of buildings to cover them; and yet they were grateful and uncomplaining. I have since seen Englishmen, with a comfortable house over their heads, good convenience for cooking, and plenty to eat, yet dissatisfied and grumbling. There are now seventeen considerable buildings on the island, besides some three or four small ones, that would upon an occasion afford shelter to four or five hundred persons.

To the Honourable the Collector of Her Majesty's Customs at Halifax, N.S. JOSEPH DARBY.

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or crescent concave to the north, and extending over fifty-two miles of sea! Caught within the horns of this crescent in a strong northerly gale, the situation of a vessel would be extremely perilous; for the ebb tide sets to the southward, directly on and over the bars, usually at the rate of one and a half or two knots, and when accelerated by winds much faster; whilst the flood stream runs at a much less rate in the opposite direction.

The whole extent of the north-west bar, from the end of the Grassy Sandhills to the depth of 10 fathoms, is nearly seventeen miles; the dry part being succeeded by nine miles of foaming breakers in bad weather, and the remaining seven miles, from 5 to 10 fathoms of depth, being usually shown by a great ripple, or a heavy cross sea. The direction of this bar is N.W.$\frac{1}{2}$N. maguetic, for the first twelve miles, then W.b.N. for the remaining distance; beyond which the water deepens gradually to the westward for many miles.

The north-east bar extends fourteen miles out from the Grassy Sandhills to the depth of 10 fathoms. Its direction is N.E.b.E.$\frac{1}{2}$E. for the first seven miles, beyond which it curves gradually till it terminates to E.S.E.

The dry part of nearly four miles is succeeded by eight or nine miles of breakers when there is any sea running. I have considered this bar as ending at the depth of 10 fathoms, but the ridge of sand continues, with a depth of from 10 to 13 fathoms, and often a heavy breaking sea, ten miles further to E.S.E., and then ends abruptly; the soundings increasing to 170 fathoms, in a distance of three miles further in the same direction.

Both bars are extremely steep, and consequently dangerous of approach on the north side; the north-east bar, especially so, having 30 fathoms of water close to it. To the southward, on the contrary, the water deepens gradually out for so many miles, that it would seem almost impossible for any vessel, using common precaution, to run on shore on that side, either of the island or its bars. Yet by far the greater number of shipwrecks have taken place there, affording a sad proof of the culpable neglect of the sounding lead, so common in the mercantile marine. Some of these vessels came on shore in fine, although foggy weather, after running for many miles in shallow water, when one cast of the lead would have shown them their danger, and in many cases saved both life and property.

In most cases the vessels were thought to be far to the eastward of the island, when they ran on shore upon it; having been set to the westward by the currents. That this alleged cause is the true one there seems little reason to doubt, for the general tendency of the currents, between Newfoundland and Sable Island is to the westward, although they are greatly modified by the various banks over and between which they flow; and are also rendered inconstant and irregular both in strength and direction by winds present and at a distance. These currents are, first, the great northern current along the east coast of Newfoundland, which is deflected to the westward by the Great Bank, and secondly, the current out of the Gulf of St. Lawrence composed not

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only of the stream of the river St. Lawrence, but also of the branch of the northern current which is so generally found entering the Gulf through the Strait of Belleisle.

I have already mentioned the set of the tidal streams over the bars; they too are doubtless much influenced by winds. It was difficult on account of the surf to ascertain the exact time of high water on the full and change days, but it was at seven hours and a half nearly, and the rise not exceeding four feet. This was on the north side of the island. I am inclined to think that it is high water somewhat earlier on the south side, as has been alleged, and that portions of the flood tide wave after passing round the bars, converge and meet on the north side, making high water there perhaps an hour or more later; but I am not aware that any precise or sufficient observations have ever been made to ascertain this. It is said by the people of the island, that all floating things which have been lost overboard anywhere in the vicinity of the island, are sure to be found on it sooner or later. This would lead us to suppose a prevailing circular motion in the currents or tidal streams, to which the arrangement of the island, its bars, and the middle ground to the north of it, in their peculiar shape, may in whole or in part be due.

Sable island, seen from the north, at a distance of nine or ten miles, presents the appearance of a long range of sand hills, some of which are very white. From the south the range of white sand appears more continuous, and very low towards the west end. On a near approach many of the sand hills are seen to be denuded by the waves, so as to form steep cliffs next to the sea. In other parts they are covered with grass and defended by a broad beach, which however cannot be reached without passing over ridges of sand, covered with only a few feet of water, and parallel to the shore, at distances not exceeding one third of a mile; these form heavy breakers, dangerous to pass in boats when there is any sea running. The landing is, in general, impracticable on the south side, excepting after several days of northerly wind. On the north side boats can land only in southerly winds, and after some continuance of fine weather; but there are surf-boats, at the establishment which can land dry when a common boat would swamp instantly. These surf-boats have been found very useful in saving people and property from wrecks, but being flat bottomed they run some risk of being blown off to sea, in the event of a sudden and violent increase of wind occurring whilst so employed.

A life-boat, therefore, that could sail as well as row, is much wanted at the principal establishment; and seems indispensable to its complete efficiency. In calm nights succeeding bad weather, the roar of the surf, on the island and its bars, can often be heard from distances of many miles.

Off the north side of the island, excepting near the east end where the deep water approaches too near the shore, the anchorage is good between the depths of 5 and 10 fathoms, and the distances of one and two miles from the shore.

The bottom is of fine sand that holds well; but the sea is so heavy, excepting with off-shore winds, that a vessel should weigh instantly on

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the first appearance of a wind from the sea. Great caution should be used in approaching from the northward at night or in thick weather, unless certain of the vessel's position, because the east end of the island and the north-east bar are very steep on that side, although the soundings afford sufficient warning further to the westward.

The south side of the island may be safely approached by the lead, excepting near the bars where it becomes shoal and dangerous, without a commanding breeze, on account of the strong and uncertain tides and currents. Vessels seldom anchor off the south side because of the prevailing southerly swell, and the consequent difficulty of landing.

The island is almost entirely composed of white sand, resembling very fine Muscovado sugar in appearance, coarser than the soundings about it, but nevertheless easily moved by the winds which cause it to drift like snow, and have been observed to form and to remove large sand hills in a very few years. A few very small and rounded quartz pebbles, and also titaniferous iron sand, forming black bands of limited extent, are occasionally met with on the beaches, but there are no large stones unless it may be a few derived from the ballast of wrecked vessels.

There is no appearance whatever of the island being based on rock. There are no rocky soundings any where near it; it appears to be simply the summit of the "Sable Island Bank," arranged in its existing form by the action of the winds and waves.

In the absence of anything deserving the name of soil, the amount and variety of the vegetation on this gigantic sand bar is extraordinary. Besides two kinds of grass, there are wild peas, and other plants, affording subsistence to 400 or 500 wild horses, and innumerable rabbits, besides the domestic cattle of the establishment.

There are strawberries, blue berries, pigeon berries, juniper berries, and cranberries. The latter are so abundant, and of such fine quality, that they have recently been proposed as an article of export, the proceeds of which might be applied to aid in the support of the establishment.

There are also many flowers and shrubs on the island, but no trees, and not even a bush large enough to afford shelter of any kind. Fuel is supplied by drift wood, mostly the produce of wrecks. Fresh water can be had almost everywhere, by digging a few feet into the sand.

The fisheries around Sable Island are exceedingly valuable, but the danger of remaining near the island, and its formidable bars, has hitherto restricted the number of vessels engaged in them to a few schooners. Codfish, haddock, and mackarel are abundant in their seasons, the latter in such astonishing numbers, that the sea appears crowded with them at times, as far as the eye can reach along the shores of the island. Although the surf is in general too heavy for the use of the seine, there must often be smooth times when the mackarel might be taken by it to the amount of hundreds of barrels at a haul.

Seals still frequent the island in considerable numbers, but the walrus is now seldom if ever seen. There are eels, flat fish, &c., in the pond, together with most of the shell fish found on the neighbouring coast of Nova Scotia.

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We had no time to collect specimens, but we observed several species of Mya, Mactra, Solen, Mytilles, Pecten, Cardiem, Natica Buccinum, Purpura, &c. The mactra were much larger than usually met with on the main land, indicating perhaps an approach to a milder climate and warmer sea.

Of the feathered tribe, besides great numbers of gulls, divers, and other sea fowl, there are geese, various species of ducks and plover in their season. Many of these lay their eggs on the island in spring and early summer. From this brief account of the natural productions of the island and surrounding sea, it will appear a far less desolate place of residence than might otherwise be supposed.

It is said to be very healthy, and those that have resided on it for years speak of it in high terms of praise:—notwithstanding the fact that a single autumnal or winter gale has borne large portions of it into the sea more than once, and that the thundering roar of the surf, shaking the island to its centre, seems to threaten a recurrence of a similar destruction during every violent storm. These things have no terrors for them, and even the more immediate and real danger of their occasional occupation, in saving life and property from wrecks, may have a secret charm for adventurous spirits that may add to their preference.

The climate of Sable Island appears to be greatly influenced by its proximity to the Gulf Stream, which is distant from it only about seventy miles to the southward. Winds from that direction almost immediately dissolve the snow which had previously fallen; causing, with the alternating northerly winds, a wider range and yet a higher mean temperature than occurs on the neighbouring continent during the winter months. The southerly winds coming thus from a warm to a comparatively cold sea, are compelled to part with a portion of their moisture, and hence are almost always accompanied with a dense fog.

These winds greatly prevail during the summer months, the south-west especially, and the sand of the island thus copiously supplied with moisture, and heated at the same time by a powerful sun, is enabled to support an amount and variety of vegetation, not usually found in such situations.

The barometer seldom or never rises with these winds, and when it falls with them rapidly and extensively, rain and wind, and if it be after the middle of August, a heavy gale may be expected.

Winds from between the north and east prevail most during spring and early summer. They are sometimes, and especially when from near the north, accompanied by the fine weather that usually attends the rising barometer; but at other times, and almost always in autumn and winter, the easterly winds bring bad weather and are accompanied by a falling barometer.

Some of the heaviest gales in these seas have been from this quarter, and they are usually followed, almost immediately after the barometer has reached its lowest point of depression, by an equally strong gale from between the north and west, and which is always accompanied by clear weather and a rising barometer.

Easterly as well as southerly winds are foggy. The latter become

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less predominant as the summer advances, when westerly winds and clear weather become proportionately of less rare occurrence.

It is the fogs, even more than the irregular tides and currents, that render this island so dangerous: they frequently last many days and nights in succession with the prevalent easterly and southerly winds of early summer; and even as late as the beginning of August, when we were about the island, only six days out of nineteen were entirely free from fogs. Winds between the north and west are, in general, frequent in autumn and winter. They almost always bring fine clear weather, with a rising barometer; but they are often of great strength and in winter accompanied with intense frost.

The position of the island, directly in the track of the violent, and said to be circular, storms, that so frequently pass along the American coast from the Gulf of Mexico, would give to a meteorological register, if faithfully kept, a far more than ordinary interest; and would also be of essential service in warning the people of the island when employed about wrecks, as well as the vessels in communication with them, of the approach of danger. A good barometer or aneroid, and a thermometer, should be supplied to the establishment, and a meteorological journal should be kept by the superintendant.

The establishment on Sable Island is at present under the command of Mr. McKenna, the superintendant; who has under him a foreman or second in command, Mr. Jackson, and nine men; two of whom, with their families, occupy outposts at the middle and east flag-staffs.

The principal establishment, consisting of a comfortable house for the superintendant and his family, buildings for the men, and the occasional accommodation of shipwrecked persons, for storing provisions, and property saved from wrecks, a forge, workshop, barn and stabling for domestic cattle, &c.,) is situated on the north side of the island, between the pond and the sand hills, on one of which stands the north-west flag-staff. The distance of the principal flagstaff from the west extreme of the Grassy Sandhills at the time of our survey, was 4215 fathoms, and I state it here for reference hereafter, whenever it may be wished to ascertain the waste of the island in any given number of years. This flag-staff is strongly ands ubstantially constructed on a sand hill forty feet high; and the crow's nest, or look-out at its summit, is 100 feet above the sea; commanding a fine view for many miles along the island, and over the surrounding ocean. It is in contemplation by the colony to show a light from this flag-staff, for the benefit especially of the Colonial Government vessel that visits the island periodically with supplies; and the schooners employed in the removal of persons and property saved from wrecks; in the exportation of wild horses, and in the mackarel and other fisheries around the island.

The east flag-staff conspicuously placed on a sand hill close to the north shore of the island, is distant 2280 fathoms from the east extreme of the Grassy Sandhills. Its position, if retained, will serve to indicate any change, that may hereafter take place, either by addition or subtraction, from this end of the island.

The middle flag-staff is situated further inland, and nearer the east end of the pond. It is intended to remove this outpost to a more ad-

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vantageous position on the south side of the island, where there is a house, about halfway along the pond, and where it will be better situated to observe and report wrecks, as well as to render prompt assistance.

The want of a post on the south side has been felt at times, when the pond has been rendered impassible by unsafe ice, and when many hours were unavoidably lost, in going round the pond, before assistance could be given to vessels that had come on shore.

Besides the houses at the three flag-staffs there is an unoccupied house of refuge on the north side, which was distant, in August last, 320 fathoms from the west extreme of the Grassy Sand-hills.

No wreck can take place on the island at a greater distance than six miles from some one of the posts; and in the event of one occurring, the outposts report by signal to the superintendent at the principal establishment.

Wrecks on the bars are of course far more dangerous to life than those that take place on the island; and it is important in such cases to know on which bar the vessel is, and the consequent direction in which to seek for safety on the island. This information, when the island is obscured by fog, or the darkness of night, must be sought by observing the direction of the line of breakers, which, on the north-east bar is between N.E.b.E. and E. mag., until near its outer extremity; whilst on the north-west bar it is N.W. $\frac{1}{2}$ N.

The establishment is supported by an annual grant from the legislature of Nova Scotia, to which the Imperial Government adds an equal sum; also by a salvage upon the sale of wrecked vessels and their cargoes; and by the occasional sale of wild horses. The number of these animals, at present on the island, is estimated at about 400, divided into several gangs, each under the leadership and control of a powerful male, who admits of no interference with his charge.

It is the opinion of the distinguished Colonial Secretary of Nova Scotia, The Honorable Joseph Howe, that much may be done to render the establishment in a greater degree self supporting, by improving the breed of wild horses, by a dairy-farm, including the rearing of cattle to a limited extent, by prosecuting the mackerel fishery in its season, by seine or lines as opportunity offered, and by the sale of cranberries, which are said to be in great demand in the United States.

In connexion with the establishment it may not be out of place to point out one important want, which seems to have been hitherto only imperfectly supplied. I allude to some provision for the religious, and intellectual instruction of those, who, from having been cast on shore at the commencement of winter, may be unavoidably detained through several of the most dreary months of the year, before they can be removed from the island.

Being without sufficient occupation to fill up their time, the opportunity would be favorable for acquiring information, and the best means of conveying it, under the circumstances, would be to furnish the establishment with a library, selected with the view of combining amusement with instruction; and especially with the hope of leading the thoughtless, but often generous-hearted seaman to recognise his obligation to that infinitely Great Being who having recently saved him from an unpre-

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pared-for temporal death, mercifully invites him to be saved from death eternal! The regular assembling of the people of the establishment and their families, together with any others that may be on the island, for public worship on Sundays, will also greatly tend to the same desirable end, and appears to be a paramount duty under the circumstances.

I cannot better close this account of Sable Island than by discharging the pleasing duty of bearing testimony to the order and efficient condition of the establishment under the able command of Mr. McKenna, the intelligent superintendent, from whom we received every information, assistance, and kind attention which it was in his power to render us, during our visit to the island, for the purpose of surveying it, and verifying its position last summer.

The Bonin Islands *in* 1851.—*Port Lloyd.*—*By Captain R. C. Collinson, commanding H.M.S. Enterprize.*

H.M.S. *Enterprize* arrived at the Bonin Islands on the 28th of April, and sailed from Port Lloyd on the 6th of May, having procured a supply of turtles, pigs, potatoes, onions and yams; pumpkins, water-melons and Indian corn were not quite ripe, but would be ready for use in another month. Fresh water was obtained from a sandy bay on the east side of the harbour; it was plentiful, although they complained of a dry season; but the casks have to be taken out of the boat unless you are possessed of a hose 300 feet long. On making the island from the southward, we experienced a difficulty in discovering the remarkable quoin mentioned by Captain Beechey as the mark for the harbour on the south side, being under the shadow of the high land at the back of it. No difficulty however, can be experienced by a stranger making the harbour from the southward, as the bold bluff on the south side is sufficiently remarkable, and the two paps, which Captain Beechey gives as a leading mark for clearing the rocks outside the harbour will sufficiently denote its position; besides that, among the detached rocks to the southward are two pinnacles, and over the "remarkable quoin" on the north side as you enter is a triple peak. We shot in close under the bluff, but did not see the shoal off it; (it will not do therefore for vessels to trust to the eye to pick this danger up,) and then had baffling winds until we opened South Bay, when we edged away to the north and came to off the entrance to Ten Fathoms Hole in twenty-five fathoms; (a better berth will be found a cable's length closer to the reef on the west side.) On leaving the harbour we were detained a day by strong southerly winds which prevented our warping to where we could have fetched out from,—and eventually we got away with a westerly wind, rounding the two fathoms patch close, and then barely fetching clear of the rocks off the south head, owing to the tide setting strong across the entrance of the harbour, (last quarter flood). In consequence of the baffling winds, vessels should always have their boats in readiness to tow. The following

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account was obtained from Mr. Chapin, one of the oldest residents on the island.—

The season for planting at the Bonin Islands is in the months of March and April, but ships calling at these islands can at all seasons procure a supply of potatoes, yams, onions, pigs, goats, fowls and fish. Turtle may be had from February until August inclusive, they begin to lay their eggs in May and continue to lay until August; after that time the females leave the islands, the males having left five or six weeks before: the females lay from 200 to 400 eggs each according to their age, and at two different layings.

Indian corn, pumpkins and water-melons, begin to ripen about the end of May. The prices of supplies are—yams and potatoes, two dollars per barrel; onions, four dollars per barrel; pumpkins, ten dollars per hundred; corn, one dollar per bushel. Turtle and goats, two dollars each; pigs, from one to seven dollars according to their size. The settlers have put hogs, goats and deer, upon some of the other islands and they are increasing rapidly. The prevailing winds from April to October are from north-east to south-east, and from November to March north-west to south-west; the strongest gales are in May and October, beginning at south-east and blowing hard for about four hours they chop suddenly round to the westward: they are not regular, that is to say, three or four years sometimes occur without any bad weather been experienced in these months: in December, January and February, gales of wind occur from west to north-west. There is a convenient place for heaving a vessel down, and a sand bank to lay a vessel on shore if necessary: two ships and one schooner have landed their cargoes and repaired here, and before the present settlers arrived, a Russian man-of-war was hove down.

Since the island was settled in 1830 by Mr. Mazerra, under the direction of Mr. Charlton (the consul for the Sandwich islands), twenty-six children, (twenty-one boys and five girls) have been born, twelve of whom died young. The following is a list of the residents at present.—

Name.	Place of Birth.	Time of Residence.
A. B. Chapin	Boston, U.S.	21 years.
N Savory	George Town	21 ,,
John Bravo	Cape de Verdes	19 ,,
Jos. Cullens	London	19 ,,
Thomas H. Webb	Ditto	5 ,,
James Moitley	Ditto	7 ,,
W. Gilly, jun.	Bonin Island	18 ,,
George W. Bravo	Ditto	15 ,,
Andrew Bravo	Ditto	12 ,,
John Newheavn	Marquesas Island	21 ,,
Pa Way	Ditto	7 ,,
Charley	Ditto	3 ,,
Harry Bolla	Tahiti	12 ,,
Thomas Pepper	Ditto	7 ,,
Harry Canacca*	Oahu	21 ,,
Thomas Davis	Ditto	14 ,,
Joseph Reef	Ditto	4 ,,

* See Note at end.

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Ten females belonging to Oahu; one female belonging to Guam; two female children of three and five years old, besides eighteen natives of Oahu that have run away from ships and will leave the islands again the first opportunity.

The following men-of-war have visited Port Lloyd:—

August 3rd, 1837, H.M.S. *Raleigh*, Captain Quin, five weeks from Macao. December 23rd, 1838, H.M.S. *Larne*, Captain Blake, forty-five days from Macao. March 18th, 1845, Russian barque, *Fertish*, Captain Vonlurlasky, thirty-four days from Manila. September 9th, 1850, U. S. brigantine, *Dolphin*, Captain Page, thirty-one days from Manila.

On August 9th, 1849, the schooner *Louisa*, Captain Hadley, and the cutter *Maid of Australia*, Captain Young, from Hong-Kong arrived, and on the 11th, the *Lorcha*, Saint Andrew's, Captain Barker (as commander of the whole): they recruited and sailed on the 29th. On the 21st of September the *Lorcha* and the cutter returned, having experienced bad weather and requiring repairs: the settlers on the island gave them every assistance in their power to fit them for sea: after they were ready they first commenced plundering the natives of their live stock, salt provisions, oil, &c. They then commenced plundering the white people; they robbed Mr. Savory of about 2,000 dollars in cash and about 2,000 more in live stock, stores, oil, clothing and medicine: in fact, all they could get hold of—and what they did not want they broke and destroyed: Mr. Savory being obliged to secrete himself in the bush for fear they would take his life. They also robbed Mr. Millichamp of his live stock, stores, money and clothing: in fact, they took whatever they could lay their hands on.

A French whale ship (the *Nile*) arrived while they were here and nine of her men left her; Captain Barker furnishing them with arms to defend themselves and prevent the French Captain and Officers from taking them; and after the ship had sailed he received them all on board.

On some of the settlers remonstrating with Captain Young of the cutter, he said he did not care what his people did, and did not care if they left the settlers with only a shirt and trowsers. They took away Mr. Savory's wife and another female with them, and sailed on January 9th, 1850, for San Francisco.

On July 20th, 1850, arrived the brigantine *Vanguard*, Captain Richards, from Hong-Kong, bound to Stewart Island for Beche de la Mar; on the 4th of August she sailed, and after she got outside, the Captain in the night sent the boat on shore armed and stole one female from off the beach, and carried her away in the vessel. We understand their intention was to get two more females and carry them to Stewart Isle, where they were to be disposed of to the Chiefs for Beche de la Mar, as females are in great demand there.

Captain Page of the *Dolphin* took the depositions concerning these outrages, and it is to be hoped that the perpetrators will be stopped in their career—and an example made that the idle and dissolute cannot prey upon the industrious now-a-day with impunity.

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The turtle are beyond a doubt decreasing annually, seldom coming now to the beaches in the harbour, and numbers are taken (by means of a long pole and a hook at the end of it) during the breeding season before the eggs are shelled; they are, however, still numerous and we experienced no difficulty in obtaining forty while we were there. They form the principal article of diet and are salted down for winter store. Bullocks have been landed on the island, but from the little demand for so large an animal, and the devastation they have caused to the plantations, are not cared for at present. The greatest boon that could be conferred on the island (as far as agriculture goes) would be to introduce the bread fruit. The settlers appeared in good condition, requiring nothing but clothing, which they obtained in exchange from the whale ships frequenting the island. About eight ships visit Port Lloyd annually, besides a number which call off the harbour for refreshments, and land such of their crew as are ill with scurvy; these men are readily taken in by the settlers, and earn their livelihood by assisting in the agriculture until some whaler in want of hands calls, and they are tired of doing as they please.

[It was observed by the Commander of the barque *Walter Morrice*, in our last number, that great difficulty was experienced in procuring hands at the Sandwich Islands, those which had been allowed to go in ships previously, having been turned adrift without wages in foreign countries. On this account no native is allowed to leave in any ships except government vessels; whalers and Hudson Bay Company's vessels, being the only vessels that have fulfilled the contract by paying their wages and returning them to the islands. Capt. Collinson shews that there are three Sandwich Islanders at these islands who may have been left in the above way.—Ed.]

Extracts *from the Remarks of H.M.S. Columbine*, (1849), *J. D. Hay, Commander.—Coast of China.*

(Concluded from page 86.)

October 9th.—The steamers under sail, I sent *Phlegethon* inside the islands to Mong. Went in *Columbine* to examine St. John's, and at night we all anchored under Mong Island.

10th.—We went to Mammee, the steamers continuing to run down under sail. I then despatched the *Phlegethon* under steam to search Tienpak, and we went on shore at Mammee to gain information. The Mandarin was very civil and much pleased with the object of the expedition. It is a small town, but a very good harbour, easily recognized by two hills named the Paps, a little to the eastward of the harbour. At night we all stopped at Ty-fung-kioh, an island off Tienpak, where the *Phlegethon* joined with unsatisfactory intelligence.

Commander Niblett was told that Shapng-tzai had gone to Nowchow with upwards of sixty sail—and all seemed to deem our further pursuit impossible. But Mr. Soames had been once down in the Canton steamer through the Nowchow shoals, so I determined at

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least to go to that port, in search of the pirate fleet. As the rest of the voyage into the Gulf of Tonquin has never been performed before by any European vessel, it may be necessary to give some directions until a more detailed survey occurs.

11*th*.—From Tyfang-kioh (which is the outward island off Tienpak) the course to Nowchow is S.W.b.W. forty miles. On seeing the island of Nowchow, it should be brought to bear W.b.S. as soon as possible, and it should be approached on that bearing. As you approach it the main land will also be seen to the W.N.W., and a high conspicuous conical black mountain rising from Red Sand Downs, should be kept to the northward of west. With these marks, the shoals which line the coast will be avoided, and the lead a safe guide, until the eastern part of Nowchow bears south, and the north point about W.$\frac{1}{4}$S. None of the present charts give any correct tracing of this island, which appears to be a Trapezium, with two short sides fronting the north, extending from the east point to the north point about W.b.N. five miles, and from the north point to the west point about S.W.b.S. six miles. The shore from the north point to the west point is lined with rocky shoals, in some parts extending from 300 to 400 yards from it, and to which the lead is no guide. A dangerous horn extends from the north point about 500 yards from the shore without any beacon to warn strangers of it, on which we touched on entering this place, and were embayed until towed out by the *Phlegethon*. On making the land, I made the steamers get up their steam, and sending the *Phlegethon* ahead to sound, ran in under topsails followed by the *Fury*. Having reached this horn, *Columbine* and *Fury* anchored, and we proceeded in the *Phlegethon* to obtain pilots and information. We found that Shapng-tzai, with upwards of sixty sail had passed through about twenty days before—having stripped the forts of their guns. We obtained pilots and brought the ships into the harbour. The greater part of the channel between Nowchow and the main is filled with sand-banks, through which are two channels. The southern channel was used by us and is safe, especially at low water, when the sand-banks are dry on their southern edges, which form the northern bank of the south channel. We saw junks working through the northern channel, but had no opportunity of examining it. The south channel is nowhere less than 700 yards wide, and excepting at the horn above mentioned, the Nowchow shore may be approached to within 500 yards. The depth is from 10 to 12 fathoms until close to the west point, when it suddenly becomes irregular with soundings from 30 to 7 fathoms. Arrived at the west point, the coast trends to the south-east with a sandy beach very steep to, and clad with some stunted trees, some groups of bamboo, a small town, and some cultivated land apparently reclaimed with some trouble from the sandy soil. There are two small forts, but as I mentioned above, Shapng-tzai had appropriated the guns. A Mandarin lives here, but there seems very little trade. A poor and civil race of inhabitants, living principally by fishing and pilotage. *Columbine* anchored with south fort N.57°E., south point of bay S.27°E.; rise of tide nine or ten feet.

12*th*.—In the morning we waited on the Mandarin, who entered into

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our views and promised to assist us. But in the meantime the following arrangements were made with the pilots: two pilots to come on board each ship, and to receive fifty dollars to pilot us to the place at which the pirate fleet was, and 100 dollars if they shewed them to us. On this day twenty-two opium junks, heavily armed, arrived from Canton laden with opium, and with passes to request me not to molest them but to afford them countenance and protection. Some of them drew fourteen feet and were going through the shoals—I therefore decided on doing the same; and Shapng-tzai, who had expected apparently that a hot pursuit would be instituted for him, had boasted that he would go where no English ship would dare to follow him, and the Chinamen thought him invulnerable.

13*th*.—This morning we weighed, and were taken in tow by the *Fury* to go down through the Nowchow shoals. The course through them is most intricate, the lead no guide, and the marks so wide that no one but a pilot could possibly take a vessel through in safety. S.W.b.S., two miles from the west point of Nowchow, the passage between the sand-banks is very narrow, not more than four or five cables, with 2½ fathoms at low water. The banks do not dry on either side, and the channel winds very much. This danger we called the *bar*. The channel is pretty safe and wide in fine weather for fourteen miles from the *bar*. Here commences an extensive *flat*.

The deepest part of the channel appears to be south from the west point of Nowchow. On both east and west sides the reefs break; but the flats are exposed to the north-east where there appears to be an intricate passage to the southward of Nowchow. On these flats there is only nine or ten feet water at low water for about three miles, and no marks that we could see to guide the pilot, but a hazy indistinct view of the distant island. It is frequently impassable for days together, but on going to the southward we had smooth water; on our return we were delayed two days, as the sea broke across, even at high water; and in attempting to tow us over the *Fury's* injection was stopped by the closing of the valve against the bottom. S. ½ W. 17 miles from the west point of Nowchow the channel is again very narrow, and winding; but the water is deep, 7, 9, and 10 fathoms. This I have called the Narrows. Between the Narrows and the bar there is anchorage, good holding ground. From the Narrows to the Junk Passage (as it is called in the charts) the channel is wide and free from danger. The coast of Luichew seems sandy and ill-peopled, but the interior seemed well wooded a little distant from the coast. W.b.S. from the flats was a small bay and fishing village, but difficult of access from surf. S.S.W. twenty-five miles from Nowchow is Hongham, a town situated three miles west of the south-east point of the Luichew promontory. Some junks were in the bay, but it is exposed to the north-east wind. We cast off tow here in chase of some suspicious junks; I sent *Fury* in chase of the most distant, and *Columbine* and *Phlegethon* examined two others; they were not pirates, but added to our former information and confirmed it; this done we proceeded S.W. ½ W. nineteen miles to Hoihow Bay, in the northern part of Hainan Island. The approach to this bay may be

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known by two remarkable hummocks over it inland, and a cone on the sand-hills to the westward of the bay; a long sandy spit about ten feet above high water mark, divides the eastern channel of the rivers from the sea. This spit may be approached on its northern side to 6 fathoms, but it should not be rounded too close, and a good anchorage in 4 fathoms will be found with a Pagoda in the town S. 55° E., the two hummocks S. 42° W., and the cone-like rock W. ½ S. I immediately landed in the *Phlegethon* with Captain Willcox, Messrs. Scott, Soames, and Caldwell, but the water was so shallow, that that vessel could not approach the landing-place within a mile, it being low water. The town of Hoihow is situated on the south-west bank of the western of two rivers, which fall into the bay; they are both shallow, and large junks can only enter at high water near the spring tides.

Hoihow is well built and populous; it is the port of King Choa-foo the capital of Hainan. We passed several forts, and a considerable number of trading junks; one feature it wants of the usual accompaniments of Chinese cities, viz., the floating population; there seemed to be no boats excepting for traffic. On landing we went to wait on a blue-button mandarin named Wong, who, on learning the object of the expedition, was much delighted, and offered to go with us. He had some war junks in the river but they were in ordinary, and could not be got ready in time; and some of the opium junks, which had come down with us, and were disposing rapidly of their cargoes, (the sale of which is here legalized on payment of a duty,) were found fit for the purpose, so he ordered eight to be hired, and ordered some soldiers to be ready, only bargaining that I should let him have all the prisoners, which I agreed to excepting Shapng-tzai, Chiciapoo, and Fat-keet (a Hong-kong shopkeeper and agent for the pirates,) who passed through this day to give his friend warning. He himself agreed to embark in the *Fury*, being he said a pilot for the Tonquin Gulf; he is an active intelligent Chinaman, and if wounds prove bravery, sufficiently wounded. Wong told us that Shapng-tzai had twice attacked Hoihow this year, but been driven off; that he had been heard of not long ago, when he attacked Pakhoi, at the head of the Gulf of Tonquin.

We had now to gain the consent of the governor-general of Hainan; his name is Ho, and he resided about six miles off at the capital; thither our party accompanied by Wong proceeded in chairs. The road was good, the country well cultivated, and the people who knew of, and appreciated our mission, were very civil, and though curious to see the strangers, not rude. The city King Choa-foo, appears about the size of Ningpo, with about 80,000 inhabitants; the streets wide and clean (for China), the walls in good repair, and every thing with more tidy appearance than is usual in China. My chair was carried into the first court and the centre doors thrown open for me, a great honour in China. Ho offered us every hospitality, and at once agreed to Wong's former proposal, giving him permission to draw on the treasury for whatever sum he required; we then took leave of him, and returned to Hoihow and went on board. We doubted their punctuality, but in this we did them wrong, Wong seemed to know the value of time as well as ourselves.

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14*th*.—A present of fresh beef and vegetables was sent on board, and wood fuel for the steamers. Water was also brought off in open boats, in which process it is liable to become brackish.

We were much pleased with these people, who seemed well inclined towards us, and we were gratified to find Wong punctual, and with his squadron under way at the time specified. I arranged with him that his vessels should hoist a flag red and yellow horizontal, which he chose as symbolical of the union existing between us: and his men, to distinguish them from our foes, wore a white belt across the left shoulder. At one P.M., he embarked on board the *Fury*, and was received with all the honours due to him as Major General, and he, his aide-camp and secretary lived with Commander Willcox till our return. The night becoming dark and cloudy, we anchored off the south-west extreme of Lieuchew, named Cammel Point, and the *Fury*, *Phlegethon*, and light Chinese vessels in company. To Cammel Point is N.70°W., thirty miles, and the point bore from our anchorage (which was open) N.E.b.N., four miles. The pilots told us that there were rocks and a sand spit off this point.

15*th*.—In the morning the wind being from the northward, we left our allies to find their own way to our rendezvous, Chookshan. The *Fury* took the *Columbine*, in tow, and the *Columbine* the *Phlegethon*, (disconnected), and to the surprise of the Chinese towed us both about six miles an hour to windward, against a fresh breeze and some sea. Nothing in fact gave them a greater idea of our superiority than this circumstance. The chart here is very incorrect. The coast appears to trend about N.b.W. from this point (Cammel) as far as we saw it, about thirty or forty miles. It is low excepting Woosheak hill—a remarkable boars-back about twenty-five miles from Cammel Point. Pilots said—the coast should not be approached under 6 fathoms.

On the chart two islands are marked Gueichow and Cin-muci-shan; but Gueichow is marked as the southern of the two. Gueichow pronounced Wychow, is the northern of the two. The southern is named Chay-yung. Chay-yung is N.50°W., forty-eight miles and a half from Cammel. It is high and bold and has no anchorage. It is four or five miles long, about 500 feet high, and has a small village. Gueichow is N.66°W., fifteen miles from Chay-yung. It is about seven miles from east to west, appears to have no trees, and is about 400 feet high. The western point is perpendicular. On the south side there is an excellent harbour, sheltered from all wind excepting from S.S.E. to E.S.E. The entrance is between the perpendicular head already mentioned on the west, and a cape on the eastern side also bold; it is about half a mile wide, but with an island mid-channel; the passage on the western side of the island is the safest. Inside the island a capacious basin free from dangers forms the port, with an average depth of 7 fathoms. *Columbine* anchored with the islet on with east point of harbour E.S.E., and perpendicular head S.$\frac{1}{2}$W.

If a survey of the Gulf of Tonquin were meditated, Gueichow harbour would make an admirable central position. It has few inhabitants; some fishermen, and a Joss-house, were all that we saw like life on the island. The Joss-house has some renown as an oracle, and Shapng-tzai

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had been here to consult futurity not many days before. As the prophecy delivered to him by the oracle was known long before we had found him, it is curious, and no doubt assisted in the panic which prevailed in his squadron after our first day's battle, on the 20th October. It was to the effect, that if he avoided destruction on the 20th, his career would be successful for three years more. To counterbalance this however, Wong went on shore after dark to consult the oracle, but its response was by no means encouraging.

16*th*.—At 2h. 30m. A.M., *Fury* resumed her labours of towing both vessels, and though the wind was strong, towed us five knots without straining. On the main N. 51° W. fifty-eight miles from the west point of Gueichow, is Pakloong Cape; it is the boundary between Cochin China and China Proper. Lieuchew is the name of the southern division of Quangsee Province, and bounds the northern shore of the Gulf of Tonquin; it is subject to the governor-general of Canton. Lieuchew-foo is the principal city and its port is Pakhoi, at which place Shapng-tzai had committed his latest enormities. Off Cape Pakloong we came upon a rock awash eight miles S. 5° W. from the Cape, but a most serious danger to navigators. From this to Chook-shan the water shoal rapidly. We cast off the *Phlegethon*. The *Fury* touched on a bank, and we ran into her, whereby we carried away our best bower anchor and starboard fore chains, without damaging the *Fury*. The shank separated from the two arms which remained in one, and with one arm sticking in the *Fury's* stern. We anchored and I went in the *Phlegethon* to examine the port, but had not time that evening to complete our reconnoissance.

17*th*.—By two in the morning the new chains were completed, and the ship refitted. In the morning I went in again in the *Phlegethon*, and the water shoaling, sent Lieut. Hancock with Wong and Mr. Caldwell to gain information. The port of Chook-shan is formed, by two semi-circular sand-banks, barely covered at high water, and dry at half tide, which project like a pair of calliper compasses slightly open, and enclose a space with about an average of 3 to 4 fathoms at low water.

Chook-shan, (Bamboo Hill,) whence the name, is a small village at the upper end, but very shallow in its approach. We found the pirate fleet had come here sixty-four strong, to refit and clean their bottoms, for which this place with its level sand-banks was well adapted; but the people of the place had refused to assist them in cutting the grass, which they burn under their vessels to clean them, and in revenge they had burned their village and killed many of the people, and had sailed on the 12th for Gow-tow-shan and Oonong, at the mouth of the Tonquin River.

We remained at anchor all day waiting for our allies.

18*th*.—At 5h. 25m. A.M., we were under sail, and with a fair wind ran to the S.S.W. S. 25° W. forty miles from Pakloong Cape is Gow-tow-shan, the Pirate's Island of the chart; the whole of the coast is here lined with islands, but strangers should go to the eastward of all, which course the *Fury* pursued, and it seemed free from dangers. *Columbine* took a middle channel, and I sent the *Phlegethon* inside, thus beating as it were the cover, over an extent of fifteen miles, and as we

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saw each other through the islands, communicating by signal. The *Phlegethon* at one time however had one fathom, and in the *Columbine* we once went inside several islands, bnt some of the channels the pilot said were foul. The features of the landscape were now materially altered; instead of the sterile sandy shore with black boulders which China usually presents, or the equally uninviting aspect of the coast of Cochin China where it is open to the China Sea; the islands seemed clad in perennial verdure, in all the luxuriance of tropical vegetation and of a limestone formation, with occasionally fantastic bare rocks shooting up from the leafy forest. It much reminded me of Princes' Island on the West Coast of Africa; but the Archipelago here might well be called the Thousand Isles, and I doubt if that number would complete the tale. At noon we reached Gow-tow-shan; on its western side is a magnificent bay; I sent the *Phlegethon* to communicate at the head of the bay with a village situated there. Capt. Niblett informed me that he saw no traces of the pirate formerly here; that the people seemed poor, civil, and afraid of the pirates, and that wood and water could be procured with facility. A margin of sand divides the sea at the head of the bay from the woodland, but at the entrance as elsewhere round these islands, the trees lave their branches in the rippling wave; there is good anchorage for a large fleet in the bay.

The *Phlegethon* having rejoined at 1h. 30m. P.M., we filled and made sail, and at about three, neared what appeared to be the main land, but which is of the same character in its geological formation as the islands, clad with trees and herbage. Here we saw some cattle, and I suppose them to have been wild, for there was no sign of human habitation. It is called Wunlan, but whether it be an island or not we could not determine. S.65°W., thirty-nine miles from Gow-tow-shan, is a cluster of rocks, some of which are always covered. *Columbine* ran between Chay rocks (for so they are named) and Wunlan, but the channel is very narrow. There is a curious mark on the east point of Wunlan, like a red streak of paint from the top to the sea: with this, S.W.b.S., it is safe to run until within a quarter of a mile of Wunlan, and then keeping the land on the westward about that distance, the channel is safe. On opening the bay at the other side of Wunlan, most fortunately we surprized the look-out vessel of the pirate fleet.

He had evidently not expected that we would run down inside the islands, and the instant our jib-boom shewed round the point, he slipped and made off. We chased him until we were obliged to anchor in 3 fathoms. The *Phlegethon*, however, overtook and disarmed him, and set him on fire; and we all anchored at the mouth of the bay for the night.

19*th*.—The smouldering remains of our late antagonist blew up in the night, and a heavy swell having set in to the bay, we were glad to sail in the morning for Oonong. We passed on our way, Fietze-loong: (Finger islands literally) a most extraordinary group of rocks and islands of limestone formation, all rising suddenly from the sea about 200 feet, and having about 7 fathoms and more water between them. They extend for twenty-nine miles, and how far to the westward I do not know.

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Some of the channels may be 100 feet wide, others not twenty; and, I can only liken the scene to some of the old drawings of the ice and icebergs breaking up in the Arctic sea. The sides are in general too steep for vegetation, but in crevices, and on the summit, some brushwood generally obtains. It would be hard indeed, however, in language to convey the ever varying interest of this grotesque cluster, though those who witnessed will hardly forget it. Amongst these islands Shapng-tzai had intended to hide his squadron, and had his look-out vessel eluded our vigilance, he would have succeeded.

On our eastern hand we saw, south-west, four or five miles from Chay Rocks, some islands which may be the "Norway Island" of the chart. About noon the *Fury* took us in tow, and we anchored off Oonong. From Chay Rocks to the outer Nine-pin rock off Oonong, is S.85°W. 19·5 miles: thence W. and N.W.b.N. to the anchorage. Fie-tze-loong appears to be the new Macao of the chart. I immediately on anchoring went in to the harbour in the *Phlegethon*. Innumerable channels made me despair, but we landed at a fort, without guns, and at last discovered a Cochin-Chinese village. The villagers were overjoyed when they learned our errand, and told us that they had been in dread of the pirate fleet for a week: that the day before they had attacked the town of Fafoong, and that they believed he was within twelve miles of us. We went to the summit of a hill, and saw the main land about ten miles distant. It was low and swampy; we could also see Fafoong, but not a vestige of the fleet. I believe the river, the mouth of which we are now describing, is the Domea embouchure of the Tonquin River, but it is not known by that name. The sunken rock off Oonong is in lat. 20° 37′ 12″ north, long. 107° 1′ 15″ east; and although Horsburgh places this river in 20° 50′ north, I think there is no appearance from the lay of the mountains inland, of any mouth of the Tonquin river to the northward of this. We returned to the ships rather disheartened with our intelligence, for we seemed to be chasing an ignis fatuus, and Oonong was to be positively the last place, which it was possible could afford the pirate refuge. Our fuel was beginning to get short, and I determined on only one more reconnoissance.

20th.—At daylight we started in the *Phlegethon*, and we had hardly proceeded a mile, when from her paddle-box we saw one large junk coming down the river, another and another appeared over the low land, and in a few minutes we counted fifty-seven sail. They on seeing the steamer commenced re-ascending the river. Those only who have experienced the dangers of an unknown navigation, can imagine the satisfaction with which we hailed the appearance of the long-sought-for fleet; but we were not doomed to be in action so soon as we hoped for. S.69° W. 12·5 from the rock off Oonong, is Tushan Island. Between Tushan Island and the main, there is only a shallow channel for boats; but between Tushan and Oonong the river has three mouths: on the northern, nearest Oonong is Fafoong: on the central and principal is Chokeum, and one more to the southward. But the bar does not extend as in most cases across each separate mouth; but is a flat extending from Tushan to Oonong, with six or seven feet in most places at low

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water. Inside the bar there is a deeper channel, and at the mouth of the Chokeum branch, 7 fathoms. This branch is about 500 yards wide, and across it we saw Shapng-tzai during the day mooring his line.

I proceeded in the *Phlegethon* to Tushan, and tried to procure a pilot. The cowardly vagabond of a mandarin told us he would send no pilot, as if he did so we should be sure to be beaten, and Shapng-tzai, would hang him for his assistance. Until nearly four in the afternoon I continued in the *Phlegethon* and boats attempting to find a channel. At that time a pilot escaped from the shore, and we lead the *Fury* and *Columbine* in tow of her over the bar. The mud was soft and we never had less than fourteen feet. When we crossed the bar, either some of his squadron felt the courage ooze out of the palms of their hands, or else he found twenty-seven were as many as could defend the river without damaging each other. In either case, all but that number retreated up the stream. At about noon he had hoisted his colours and fired guns of defiance, and some of the prisoners told us he had hung the Hong-Kong agent, for having as he thought betrayed his place of refuge. His fleet presented a magnificent appearance, and moored near the centre of the line his flag-ship with her two tier of guns on the broadside and three on the stern and quarter—looked and might have been a formidable opponent. A large black triangular flag, with the great bear constellation flew at the fore, the mark of the triad society. His own piratical flag, a red triangle with black scolloped edges was hoisted at the main, whilst over his stern a splendid scarlet flag with gold edging floated lazily on the evening breeze. All his squadron also displayed the two former devices, as had been the case on board Chiciapoo's squadron which we had so lately destroyed. He did not attempt to disguise himself, but boldly opened fire from the whole line on the *Phlegethon* as we entered the river, and for above half an hour the shot from above 300 guns was ploughing the water up ahead of us in perfect foam.

In the meantime the *Fury* had anchored the *Columbine* about 800 yards from the enemy, and she with springs on her cables had joined in the battle. The enemy still continuing an unabated though ill directed fire—I desired Commander Niblett to commence firing rockets, and pulled across to the *Fury* who was nearer the northern shore. In doing so, I hailed the *Columbine* to fire shell, and was then proceeding to the *Fury*, when I saw a rocket from *Phlegethon* dip over the bulwark of the two-decker, and she instantly blew up with all hands. On getting on board the *Fury*, she continued to push on into the line, and at about six P.M., the whole twenty-seven had ceased firing, and were either on fire, or had cut their cable and run on shore, where the boats of the squadron destroyed them: one boat escaped with a personage of some distinction, and I sent the *Phlegethon* in chase. She had twice fired into the boat, and in a few minutes would have had possession of her—when a couple of shots cut her shank-painter and cat-stopper at the same moment, and she was brought up.

The action being over, I proceeded up the river in the *Phlegethon*, and about three miles up, found a good situation for the squadron, where the southern mouth of the river separates from the Chokeum branch;

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here I anchored the *Fury*, and then returned in the *Phlegethon* to bring the *Columbine* up to this place.

We arrived just in time, for the tide had lifted several of the burning vessels off the bank, and were now drifting them into the *Columbine's* hawse. Several she had been enabled to avoid, but when we came in the *Phlegethon*, one was so close to her, that we had to push between the *Columbine* and the burning mass, and the end of a rope being hove on board, we towed her up to the place where I had left the *Fury*, and we all anchored in safety for the night. The sight as we passed up the river was magnificent: the sides were lit up by the burning vessels, and the smoke hanging over in a dense canopy, reflected a crimson lurid glare. The mandarins at Fafoong, had in the meantime taken heart of grace, and had staked their branch of the river across, so that no escape remained for the rest of the fleet. Five light vessels only, in whom I fear Shapng-tzai was, were all that effected a passage by that channel. Thus we celebrated the anniversary of Navarin.

21*st*.—Early in the morning, I took the *Phlegethon* and two boats from the *Columbine*, and proceeded down the river to examine the southern branch. At daylight having got to the bar, we saw one escaping: her we destroyed, and then proceeding up the southern branch, attacked them in every creek where they had taken refuge: whilst the *Fury* and the boats performed the same good office in the main branch; and Lieut. George Hancock, in a boat of the *Fury* coming suddenly on nine of them, had a fight which terminated in a hour and twenty minutes in their destruction. In this day's operation we destroyed twenty-four more, and again rendezvoused at our old station; and the *Fury* shifted down to the mouth of the river.

22*nd*.—*Phlegethon* towed *Columbine* down to the mouth of the river, and some country people bringing information of more vessels being up the river, *Phlegethon* took the boats of the squadron in tow, and we went thirteen miles up, carrying 3 fathoms. Here we found two large ones, which we destroyed with ease; and four more were destroyed by the Cochin-Chinese in the course of the day—making altogether fifty-eight sail destroyed in the three days' operations, and only six vessels remain of this once formidable fleet consisting of

VESSELS.	GUNS.	MEN.	
1	42	120	about the average number of men and guns.
16	30	75	
42	19	40	
5	6	30	
Total, 64	1250	3150	

Of which escaped two of sixteen guns, and four of six guns, and about 300 men. The Cochin-Chinese were delighted with our success. Their chiefs came down to the water side in their scarlet robes to watch the steamers, and to acknowledge us as we passed; and hundreds came on board to see the ships who had saved them from their cruel oppressor. It was to me a source of pure and unalloyed pleasure, thus to find myself a victor in a foreign country; not in the character of a conqueror, but of a deliverer: not caressed and feared by those whom we had thus

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astonished by a display of power they must have fancied almost superhuman, but thanked by grateful hearts released from a thrall too great for human endurance, and which rendered their position more bitter than death itself.

Columbine dropped down to *Fury*, who shortly afterwards took us in tow. Here we received large quantities of wood for fuel, which seemed to be in some abundance, and cut ready for the furnaces, with which the natives evaporate the sea water for salt.

The natives also told us, that within a day's journey they had coal; but we had no time or opportunity to test the accuracy of this fact. I however, am disposed to believe that it is so, and a respectable Cochin-Chinese, who gave me much information, said, that he thought it might be laid down on contract at Hong-Kong during the south-west monsoon, for about six dollars per ton. I fear, however, that there is difficulty in obtaining fresh water. We had innumerable exploring parties away, for the purpose of taking prisoners, and attacking the pirates who had landed on the islands, and none of them saw any fresh water. Fowls and supplies of all sorts were also difficult to procure. Great numbers of Roman Catholic Christains came on board, in such numbers, indeed, that I fully believe the numbers, great as they seem, which are stated by the French Roman Catholic mission; and I believe, that three out of five who came on board were of our creed.

At 11h. 30m. A.M. *Fury* made sail, and we left our new but firm friends—having been the first English or European ships in the river since the *Formosa*, in 1680. Certainly the first man-of-war, and having left an impression behind of just and fair dealing, of power and skill, they could have had no idea of, and a happy contrast to the visit of the French to Touron Bay three years before. It was to be expected that English ships would overcome their hostile fleet in battle, but our thanks are due to God alone for their discovery, and for the miraculously bloodless nature of the conquest: to Him therefore be the praise.

On leaving the river, the *Fury* unfortunately struck on a sunken rock, whose latitude and longitude I detailed before, and was unable to proceed until the next morning.

24*th*.—2h. 30m. A.M., *Fury* floated, and in tow of her we reached Hoihow on the evening of the 25th, our passage across was beautifully tranquil, and we found regular soundings, 27 fathoms in the middle of the gulf, and 15 fathoms nearer the shore.

26*th*.—Wong having landed the night before, the governor-general came down to meet me at the port with all the mandarins, and we were rapturously welcomed by the whole population; they begged us to stay, but our time was too short to permit it. The governor came on board the steamers in spite of a heavy gale then blowing, and I intended to depart that night, leaving *Phlegethon* to find her own way up, but a heavy north-east gale forbade us, and we had an opportunity of testing the excellency of the road of Hoihow as an anchorage.

27*th*.—The gale prevented our leaving.

28*th*.—We reached the *flats*, but found them impassable; the *Phlegethon* however managed to cross.

29*th*.—Still unable to cross.

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30th.—Crossed the *flats*, landed the pilots at Nowchow, and proceeded in tow of *Fury*, who anchored us at Hong-Kong on the 1st of November, and found to our great regret that the gallant old admiral Sir Francis Collier, who had entrusted me with the command of the expedition, had not lived to witness its successful termination.

I cannot speak in too high terms of the officers and men serving under my orders; Commander Willcox of the *Fury*, by his ability judgment, and gallantry, contributed essentually to the successful result, and in my official letter, I had occasion to mention Commander Niblett, of the *Phlegethon*, Lieut. Hancock, in charge of the *Hastings* seamen, and Capt. Moore of the marines. During my absence from the *Columbine*, Lieut. J. H. Bridges was in command of her, and handled her as was to be expected from so old and deserving an officer; Messrs. Chambers, Close, and Walker, (mates), and Messrs. Rathbone and Wootton, midshipmen, and Mr. Benifold passed clerk, were also particularly noticed. For our track and the positions of places in the Gulf of Tonquin, I must refer to the tracing and remark book of Mr. Thomas Kerr, (acting-master), which accompanies this; a few short extracts from his remarks were published at Hong-Kong, for the benefit of commerce and navigation.

I have no doubt that a considerable saving in wear and tear of steam-vessels, might be effected by using the Gulf of Tonquin and the Junk Passage, during the early part of the north-east monsoon, as the track from Singapore to Hong-Kong; but until more fully explored, it will, still remain a bugbear to the insurance offices. Hainan appears wealthy and capable of taking some of our manufactures, and some applications were made to Mr. D. R. Caldwell, the able interpreter of the expedition, for various descriptions of English manufactured goods, especially for long cloths, seven thread red long ells, unbleached long cloths, and American drill unbleached; and the legality of the sale of opium removes the bone of contention, which elsewhere affects our trade. The price of the wood for fuel which we received on this coast, was at the rate of 15 piculs per dollar, and 2350 piculs of wood burned equal to the consumption of forty-two tons of good coal. I have no doubt that with a little research, coal will be discovered in Cochin-China; the report of its presence prevailed among the natives, and the lime-stone formation seemed to favour the supposition.

Account of Horsburgh Lighthouse, and Necessity of Lighting Eastern Seas.*

The lighthouse was designed in 1848, by J. T. Thomson, Government Surveyor, and the plans were sent home to the Court of Directors for approval, which was received in December, 1849. The rock on which

* Some additional particulars to the account in our former number induce us to preserve this.—Ed.

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the lighthouse is erected, is called Pedra Branca, and is about 100 feet broad, and 150 feet long; the highest point is twenty-four feet above high water spring tides, distant from Singapore forty English miles, and from the nearest land, Point Romania, ten English miles. On this rock there is however, only room for a building of twenty-two feet diameter. We do not see the height of the lighthouse stated, but the light is ninety-five feet above high water spring tides! It is seen from a ship's deck as a star of the first magnitude on the horizon, at a distance of fifteen nautical miles—from the mast-head it might be seen twenty-two miles. This is rather vague; heights from water, and not from deck or masts should be given. The first landing, for the purpose of commencing the work, was on the 31st of March, 1850, though nothing could be done until the 11th of April. It was completed, and the lantern ready for lighting on the 20th September, 1851, and during this period the works were put an end to from the 21st October 1850, to April 1851, so that the time occupied in the work was about one year. The estimates sent home were for the building 15,928,04 dollars—afterwards alterations to the extent of 1,000 dollars more were made—for the lantern £1,500. The cost is for the building about 16,500,00 dollars; for the lantern £1,370. We have also been favoured with a view of a sketch of the lighthouse. It is a plain building of the usual form, but with less expansion at the base, and not so much tapered as some other lighthouses. From the description, it appears to be strongly and solidly built, and we trust will long stand a guide to the "tempest tossed" barque.

For the erection of this light, we are indebted to the exertions of Colonel Butterworth, without whose energetic recommendations it would still have been among the things that are to be. We are informed that Colonel Butterworth's zeal for the interests of the safe navigation of the Straits does not end here, but that he is now engaged in pressing on the attention of the authorities the necessity of a thorough lighting of the Straits, and is now recommending as a step in the proper direction that a light be placed on the 2½ fathom Bank off Parcelar Hill. From our information we believe that he will be successful—not of convincing the Court of Directors that the thing is necessary, but that it ought to be done, and if so, that it can easily be effected, as they have the *Torch* light-ship in Calcutta, available for the service. Our informant says—"We shall then only want a light on the Rabbit and Cooney, near to Tree Island, and about twelve miles to the westward of our harbour. This latter might I think be done for three or four thousand dollars. I look upon Tree Island as the greatest obstacle in the Straits, and I think it is generally considered so by commanders of ships, and few of them are bold enough to run past it at night time in the finest weather; even the steamers do not venture." And by way of a clincher adds—"The *Singapore* having grounded on or near the 2½ fathom Bank the night before last, (28th September,) will serve as a strong stimulant in bringing about a floating light."

Matters of such moment as the erection of a lighthouse are not to be discussed off hand, as we would drink a glass of champagne or eat an

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ice; and no one seems so thoroughly to feel this as the Honourable Leadenhall Board. The lighthouse was designed in 1848, perhaps in January, perhaps in December, say the latter month—the plans and specifications therefore would be in England in the latter end of February, and the Honourable Board takes from that time till October, or eight months, before it can make up its mind—the permission was received in December, the Honourable Board's financial mind being still undecided, whether it would cost the amount stated in the estimates, or double that sum.

It is superfluous to dilate on the advantages of lighthouses, and we have had lately a fearful example of what may be caused by uncertain groping in the dark, through narrow Straits, where the fear of running on a shoal caused the captain of the *Pacha* to disobey standing Admiralty instructions, by which disobedience a valuable steamer and cargo were lost. The *Household Words* has an article on the "Lighting of Eastern Seas," which seems almost prophetic—it says "Small shipwrecks excite no attention; must we wait until the newspapers are fed with a 'tremendous catastrophe' before we do our duty to the men who navigate those distant seas."

The newspapers have by this time been fed with this "tremendous catastrophe," luckily not attended with much loss of life, and we doubt not this catastrophe will have more effect in inducing the Admiralty,* the Peninsular and Oriental Company, and every one interested in the matter to proceed to carry out a plan for the effectual Lighting of the Eastern Seas, than all the writing of all the newspapers in the world. There is great eloquence in these dumb examples, and though we may and do regret the loss of life and treasure, yet we cannot help thinking that this occurrence is most fortunate, as it will beget an activity that no precepts, however well enforced, could have done—

> "For *men* remember battles, fires, or wrecks,
> Or any other thing that brings regrets;
> Or breaks their hopes, or hearts, or *purse*, or necks."

There are several parties interested in bringing about, not only the lighting of the Straits, but also of all unlighted Eastern Seas—where great traffic is going on. First ought to be the Admiralty,* next the East India Company, then the Peninsular and Oriental Company, then Merchants and Underwriters. We give the place of honour to the corporations, but we need not say that though it is their duty to be the first movers,† to their own exertions, the merchants and underwriters

* Our author is much mistaken. The Admiralty has only to approve or disapprove, to recommend in the former and withhold approval in the latter.—Ed.

† Loyd's agent at Port Louis, who had made an investigation into the circumstances of the loss, thus writes—"There can be no doubt that the great loss of property is caused by the neglect of our Government in not putting up a lighthouse on that part of the island. We as Lloyd's agent, took advantage of the feeling at the moment and waited on the Government to request them to have a lighthouse forthwith erected, without waiting to refer to the home authorities. We are happy to say that the Governor consented to take upon himself the responsibility, and a lighthouse is now in course of erection, although it may be twelve months before it is lighted."—*Times, September 24.*

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must look for the carrying out this most necessary work. We would therefore advise that the merchants of this place make a move at once, not only to second Colonel Butterworth's efforts for the lighting of the Straits, but also to press upon our own Governor and Admiral, and through them, on their superiors, the absolute necessity of proceeding at once and without delay to carry out a grand scheme of lighthouses in these seas. In taking this matter into consideration, we would further advise the merchants to form themselves into a committee, and take the evidence of some of the very able men who commanded their ships here; and from that evidence, draw up a recommendation which they might submit to the Governor and Admiral. Perhaps the latter gentleman might either himself assist, or permit some of his officers to assist the committee in their enquiries. We recommend this work to the Canton Chamber of Commerce as the body representing the Mercantile Community, they must feel that it is a valuable opportunity of rendering a great service to trade, and one which would cover them with honour as leaders in such a moment.—*Hong-Kong Register, November* 25.

Terrestial Magnetism and the Law of Storms.

Colonel Reid in his work on the Law of Storms, declares his object to be "not to propose a particular theory, but to endeavour to direct attention to *curious facts:*"—such is the object of this paper.

To register facts is to collect materials for theory, and he who thinks he can render even feeble assistance in research, has a duty to perform.

Nothing that has connexion with natural phenomena can be *beneath the notice* of the man of science.

The early steps of scientific investigation lead necessarily through obscurities, perhaps are at times nearly lost in darkness, and until the broad light of truth can illumine these steps, the wayfarer must be content to be guided by the feeble glimmerings which attested "facts" afforded; and like the watchful mariners in his midnight course, must if he can, so use these distant but *fixed* stars, of however small magnitude, as to keep him from error and difficulty.

We should receive *with some forbearance* statements of observed coincidences, and conformities, for *under such aspects the laws of natural science generally at first present themselves.*

Whatever tends to develop theory, ought therefore to be *acceptable*, and few speculations, which are entered upon honestly, fail to elicit some truth.

A complete revolution in philosophy and the arts may be traced to such commonplace occurrences, as the falling of an apple, the boiling of a kettle, or the flaying of a frog. But the *master-minds* of the respective periods were required to render these most simple occurrences subservient to the weighing of the sun; the subduing of the winds and tides, and the annihilating of space in the intercourse of man with distant man!

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We may then hope and take courage when any "conformities" and "coincidences" present themselves in connexion with even the most abstruse science, provided we take proper care that they be *placed before such master minds* as alone are able to adopt truth, and reject fallacy; and what science is *more important* or *less understood* than Terrestrial Magnetism!

Perhaps not many books have been received with greater caution and interest, than Col. Reid's on Storms, or have resulted in more real benefit to the nautical world, and therefore to mankind; and there is a large and energetic and highly talented class of persons in our naval officers and mercantile commanders who have the will, and the leisure, and the opportunity, of aiding with observations which *they only* can furnish; but like a mighty steam-engine they must have a "line" to run upon. Valuable reports are added almost daily upon the occurrence of storms, but I am not aware that any increase of absolute knowledge, has for years been attained, beyond what may be called "practical;" a few humble remarks therefore on this difficult subject may perhaps be excused.

Extraordinary characters belong to "Cyclones" (the now accepted term for whirlwinds). They seem to strike the earth in *certain parts only* of its surface. There are well defined limits within which these fearful visitations assail us, and there are also regions which are totally exempt from them. At times the mightiest fabrics which human skill can construct, labour and groan, and literally tremble under their influence, until oak and iron are hurled in one vast wreck; and confusion, and distress, cover the raging surface of the ocean, or all is engulfed in the profound abyss. On shore, whole populations are destroyed, and the face of nature undergoes a permanent change at their approach. Such is their power, and no one who has witnessed or read of such dire calamity should fear to offer even the least hopeful clue to what might lead from the labyrinth of speculation to knowledge and its resources.

If we examine Redfield's and Col. Reid's illustrations, it will appear that some places *in particular*, are remarkable as districts at which Cyclones have most uniform recurrence; and most dreaded effects. Let us take the West India Islands, and the Southern Indian Ocean. If we also examine "Barlow's Chart of Equal Variations," we shall find certain lines denoting every degree of variation of the needle, and then lines being drawn through points having the same amount of variation, are hence called "*lines of equal variation of the compass.*"

In the first place, the hurricanes of the West Indies have a certain uniformity of direction which offers much field for consideration. They all invariably originate in the equinoctial regions of calms; strike the earth in a direction nearly coinciding with the lines of equal, or lines of *no* variation of the compass—approach the coast of the United States, when they most generally (perhaps always) *recurve* to the eastward, and approximate the more *northerly* lines of variation, *in which they seem to lose themselves* in the *prevailing* westerly winds which also *blow along these lines.*

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In the next place, we see that in the southern hemisphere to the eastward of Madagascar, the direction is accurately and invariably similar; for, originating near the Equator, they begin their course by traversing as before, the lines of equal variation, from the regions of equatorial calms, recurve to the eastward, (not far from Madagascar,) and approximating the more *southerly* lines of equal variation, *lose themselves finally in the prevailing north-west winds, which also blow along these lines.* Hence it will be apparent that the directions of the Cyclones in the northern and southern hemispheres are precisely similar, but reversed; and Col. Reid proves that the gyrations take contrary directions in each hemisphere; *why they should recurve at particular places is for further research.*

It is submitted therefore, that here alone is sufficient "coincidence" to warrant serious enquiry. We might bear in mind the circumstance of these curves extending to equal distances from the line of *no variation* in each hemisphere.

Now, *should there be any general law involved in these occurrences it would be evident in other districts*—let us see!

Not to mention the various proofs which exist in Col. Reid's work, the *Times* of yesterday, (of December 10th, 1851), has the following mention of a hurricane which happened on the 26th October last, viz.—"The gale commenced from the south-east and blew in tremendous gusts for twelve hours, extending along the whole coast *from Madras to the mouths of the Hooghly.*" An unexpected corroboration! For here, as in the West Indies and near Madagascar, the Cyclone evidently took its rise *in the region of equatorial calms*, having, according to the assumed law for the northen hemisphere, a *north-westerly course from the equator, along the line of equal variation recurving to the eastward, along the line of equal variation*, and within, as before, a degree or two of the line of *no* variation.

In speaking of the typhoons of the China sea, Col. Reid remarks (page 261), "If the tracks of these typhoons are similar to those of the West India Hurricanes, they will generally come to Canton from the Phillippine Islands."

On comparing the tracks of typhoons with charts of equal variation they do so: for in accordance, (I repeat the phrases) with the assumed law for the northern hemisphere, they take a direction from the equator, *along the line of equal variation*, and *as in all known cases, from within a degree or so of the line of no variation.* Nor must I omit calling special attention to one other set of extraordinary "coincidences." If we take the district marked in charts as the limit of typhoons in the China sea, we shall notice that the line of "*Northern limit*" begins on the Tropic of Cancer, in long. 100° east, passes along the northern end of Formosa, and curves along or near the Kurile Islands.

The "*Southern limit*" originates at the Gulf of Siam, leads to near the Caroline Islands, until it meets the meridian of what is considered to be the "*Eastern limit*" of typhoons, in long. 148.°

Also in lat. 10° south, there is a line commencing on the east coast of Africa running eastward, just south of Java, until, by a PECULIAR SWEEP

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in about long. 127° east, it suddenly bends southerly until it is lost in Vansittart Bay, in New Holland, and is marked as a "*limit of monsoons.*" Now, on placing these on a chart of equal variations of the compass, we find that this line of northern limit of typhoons is *identical with the line of no variation*, while the "Southern limit" *exactly bisects the space between the line of northern limit, and the line of southern limit of monsoons, in lat.* 10° south, and the *last is exactly* and precisely in its eastern part in *the above noticed "peculiar sweep" into Vansittart Bay, New Holland, and,* ON THE LINE OF NO VARIATION! Again, the axis of the great storm of November 1836, is supposed by Johnstone to have been in a direction between Newfoundland and the English Channel, *and this, again, is precisely on the line of equal variation.*

How incumbent is it then on naval and merchant commanders to enrich us with observations made, as Capt. Methven so judiciously recommends, "on the spot, and at the time." It is very desirable to obtain accurate information as to the monsoons of the coast of Brazil, and also those of the coast of Mexico.

Johnstone, in his admirable *Physical Atlas*, observes (page 55), "In the Bay of Bengal, the storms always come from the eastward, and travel to the westward; PERHAPS FROM E.S.E. to W.N.W., will be found an average track:"—this is again precisely on the line of equal variation!

But there are other "conformities" worthy of remark in these lines, for had the continent, or rather coast lines been *designedly* so contrived, as to form with them a uniform *desired* angle of coincidence, it would have been difficult so to have drawn them as to have placed them in positions differing from the present arrangement. As a general rule, it seems that the directions of all the principal mountain chains of the globe, however extended, yield some obedience to a law in which these lines of equal variation are an important feature! They generally, *perhaps invariably*, cross the lines of equal variation at a very large angle. Take Madagascar as a type. All the great promontories of the world shew this conformity. Look at the coast lines of North and South America, Australia, Africa (particularly where the coast of Guinea seems distorted as if to meet the requirements of the supposed law. Look at the Mediterranean coast, the Baltic, the Alps, Pyrenees, Carpathians, Himalayas, the mountains in the United States, the Rocky Mountains, the group of Spice Islands, &c., and when we consider the various directions which these curves take, throughout the world, sufficient "coincidences" and "conformities" are found to justify investigation.

I would further, with all deference, remark that, so far as limited observations warrant an hypothesis, and taking the wide ocean as uninfluenced by promontories and local obstructions, we find I believe *without exception*, that the *tidal or high water waves have a direction approaching a right angle to these lines of equal variation. If facts*, these are worthy of notice; in all humility I beg to propose them (if not already done by others), to the nautical and scientific world, as subjects for research, and should be gratified to see among the Nautical Notices of the month in this Magazine, any observations ("made on the spot") from commanders and others, as bear upon these remarks. The cir-

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cumstance of cyclones always striking the earth's surface from the eastward, would seem to indicate that thermo-electricity is an active agent in the Law of Storms, and thus its relation to "Terrestrial Magnetism" renders a consideration of its influence, highly important and interesting to both the philosopher and the mariner. I am of course aware that these lines of equal variation undergo gradual periodical change; but time and more active observation must decide if the coincidences referred to accompany these changes.

S. M. Saxby.

Bonchurch, Isle of Wight,
December, 1851.

The Fareham Life-Boat.

If it be admitted as a great desideratum, that every sea-going vessel, and especially every passenger-steamer and emigrant ship, should carry life-boats enough for any emergency, and which, while they possess every necessary qualification as seaboats, shall be quite out of the way of every thing else, and neither hamper a ship's decks nor sides, then the boat to be described has a strong claim upon the attention of the public. This newly invented collapsible boat, which gained a prize medal at the Great Exhibition, has been fully tried upon a considerable scale, and is found to possess advantages beyond the inventor's most sanguine expectations. It combines strength with lightness in a degree far exceeding any other boat; it is quite insubmergible, being light even when full of water, and freeing itself very rapidly. It shuts into one-fifth of its beam, *e.g.* a boat ten feet wide shuts into two feet. The expansion is effected in *one second* entirely by its own weight, and when expanded, oars, masts, sails, &c., are all found in their places.

It is a most excellent sea-boat, pulling very lightly, and in sailing, especially on a wind, it is superior to every other boat of equal draught.

It is stowed outboard frapped to by gripes against the ship's bulwarks or hammock nettings, and there presents scarcely anything for wind or sea to act upon. Owing to its extreme lightness and small dimensions when stowed, the very largest boats (even big enough to carry 500 persons), may be carried outboard without inconvenience.

Such is a brief ennumeration of some of its qualities and peculiarities, we will proceed next to state the manner in which the Fareham life-boat is constructed.

The framework, which is of wood, American elm, is composed of broad, thin, and flat timbers running fore and aft; these are all joined together at the ends with a peculiar but simple *chain hinge*. The boat shown in the engraving has eleven such timbers, five on each side the keel, when shut these all lie side by side like the leaves of a closed book; and when open, they assume the positions of planes radiating from a common axis.

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On *each* of the edges of these timbers is stretched a covering of strong thick felt coated with india-rubber; thus the boat is doubled into ten longitudinal cells or compartments all distinct and separate, so that injury to one does not affect the buoyancy of the others.

The ends of the timbers all abutt against a semi-cylindrical block at each end, which in addition to other advantages closes the apertures at which the air enters the cells.

The platform which is jointed along the middle, is jointed also to one pair of timbers, and all the thwarts similarly to another. These compose the chief extenders of the boat.

The great strength, which is truly astonishing, is owing to the *plank-on-edge* principle, these radial planes, combining together to produce extreme rigidity, while the two coverings binding the edges of the timbers in every direction, a structure is produced far exceeding anything else in the combination of strength with lightness.

It should be well observed that though so light, this boat is extremely stiff and quite unequalled in weatherly qualities, depending upon the peculiar form which the bottom takes when in the water. The slightly elastic material yields a little, and rises in *faint grooves* between the timbers, immensely increasing the lateral resistance. The finest and most beautiful lines can be easily obtained upon this principle. The expense of these boats is less than other life-boats.

Proposed plan of lowering these and other boats.

Nothing is more common in a sudden disaster at sea, than loss of life, arising from the way in which the boats are lowered. In the confusion, one fall runs out faster than another, or one gets fouled, and the boat takes the water end on. The proposed plan effectually prevents fouling, at the same time that both ends *must* go down together.

The boat is hoisted in the usual way, after which the loose ends of the falls are wound round a large two grooved sheave or reel, which takes all that remains; there is a friction strap passing round a kind of flaunch on the reel, acted upon by a lever like a common crane, a spring strong enough to produce the required degree of friction to prevent motion, is always acting upon the end of the lever; to lower the boat a hand applied near the spring pulls up against it, the friction is diminished and the boat begins to drop, and may be stopped or checked at pleasure.

This will be easily understood by reference to the engraving (fig. 4,) R is the reel, DD the davits, SS two sheaves open like those of a snatch-block for laying the rope in when all wound up, L the lever, P the spring, S an iron stancheon to carry the reel. The dark line *e e e* is the friction strap; fig. 5, is the reel in profile showing its deep grooves. It will be observed that as the boat gathers way in descending, the turns of rope upon the reel become less and less, giving the lever more and more power over it.

Description of Engravings.

Fig. 1, is a midship section of the boat when expanded, *a a a . . . a*

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are the timbers and *b* is the keel. These extend the two coverings *c c c . . . c* on their outer, and *d d d . . . d* in their inner edges. Thus the whole boat is divided into ten longitudinal cells or segments *e e e . . e* entirely distinct from each other; these cells inhale air in expanding the boat and blow it out again when she shuts.

The extension of the boat which is most perfect and rigid is effected by the falling of the thwarts, *f*, and the platform *g*, assisted by small stancheons which drop under each thwart, and six others which support the gunwales, these last are shown at *h h . . . h* Fig. 2.

The platform *g g g . . .* and the thwarts *f f f . . . f* are shown in Fig. 2, in their horizontal position when the boat is open; they all stand up like a high pitched roof when she is shut.

There are two shackles *k k* on the centre hinges of the platform for collapsing the boat.

The mode of stowing is shown in Fig. 3, *l l* is a part of a ship's side and bulwarks, *m* a deck-beam, *n* the davit.

The boat is frapped to against the bulwark outside, and secured there as firmly as possible in gripes in which also she rests. The spans *o o* secured to ring-bolts in the gunwales, hang upon the davit-falls ready to receive the boat.

To lower it is only necessary to cast off the gripes when the boat flies out and open into the position shown by the dotted line, at the same instant the thwarts, platform, and stancheons all drop into their places; she makes one violent inspiration, by which some hundreds of cubic feet of air are inhaled into the cells, and in *one second* she is ready to lower, having oars, mast, sails, &c., all in their places.

Arctic Matters.

The following letters (recently printed in "*The Leader*") from an officer with Sir John Franklin are interesting at the present time.

Her Majesty's ship Erebus, at sea,
June 8, 1845, *Ten p.m.*

———You appeared very anxious that I should keep a journal for your especial perusal. Now, I do keep a journal, such as it is, which will be given to the Admiralty; but, to please you, I shall note down from time to time such things as may strike me, either in the form of a letter, or in any other form that may at the time suit my fancy. I shall probably never read over what I may have written, so you will excuse inaccuracies.

I commence to night because I am in a good humour. Every one is shaking hands with himself. We have a fair wind, actually going seven knots, sea tolerably smooth, though we do roll a little; but this ship has the happy facility of being very steady below, while on deck she appears to be plunging and rolling greatly. Our lat. is now about 60° 0′, long. 9° 30′, so you will find out our "whereabouts." The steamers *Rattler* and *Blazer* left us at noon yesterday, near the Island of Rona, seventy or eighty miles from Stromness. Their captains came on board and took our letters; one from me will have told you of our doings up to that time. There was a heavy swell and wind

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from north-west; but it began veering to west and south-west, which is fair. The steamers then ranged alongside us, one on each side, as close as possible without touching, and, with the whole force of lungs of officers and men, gave us (not three, but) a prolongation of cheers, to which, of course, we responded. Having done the same to the *Terror*, away they went, and in an hour or two were out of sight, leaving us with an old gull or two and the rocky Rona to look at; and then was the time to see if any one flinched from the undertaking. Every one's cry was, "Now we are off at last!" No lingering look was cast behind. We drank Lady Franklin's health at the old gentleman's table, and, it being his daughter's birth-day, hers too. But the wind, which had become fair as the steamers left (as if to give the latest, best news of us), in the evening became foul from north-west, and we were going northward instead of westward. The sky was clear, the air bracing and exhilirating. I had a slight attack of sguish headache the evening before, but am now clear-headed, and I went to bed thinking of you and dear——, whose portrait is now looking at me; for I am writing at the little table you will see in the *Illustrated News*—only you must imagine that the said table is three feet long, or from the bed to the door, and the picture just looking down at me.

This morning we began to have a fair wind; before the day was half over it was right aft. The *Terror* is coming after us, the transport sailing close to us with as little sail possible, for she could run us out of sight if she chose; they fear the ice, doubtless, not being built to shake it away. In our mess we have the following, whom I shall probably from time to time give you descriptions of:—First Lieutenant, Gore; second, Le Viscomte: third, Fairholme; purser, Osmar; surgeon, Stanley; assistant-surgeon, Goodsir; ice-master, (so called), Reid; mates,—Sargent, Des Vœux, Couch; second master, Collins; commander you know better than he does himself.

The most original character of all—rough, intelligent, unpolished, with a broad north-country accent, but not vulgar, good humoured, and honest hearted—is Reid, a Greenland whaler, native of Aberdeen, who has commanded whaling vessels, and amuses us with his quaint remarks and descriptions of the ice, catching whales, &c. For instance, he just said to me, on my saying we should soon be off Cape Farewell, at this rate, and asking if one might not generally expect a gale off it (Cape Farewell being the south point of Greenland), "Ah! now, Mister Jems, we'll be having the weather fine, Sir! fine! No ice at arl about it, Sir, unless it be the bergs—arl the ice 'll be gone, Sir, only the bergs, which I like to see. Let it come on to blow, look out for a big 'un. Get under his lee, and hold on to him fast, Sir, fast. If he drifts near the land, why, he grounds afore you do." The idea of all the ice being gone, except the icebergs, is racy beyond description. I have just had a game of chess with the purser Osmar, who is delightful. He was with Beechey in the *Blossom*, when they went to Behring Straits to look out for Franklin, at the time he surveyed the north coast of America, and got within 150 miles of him; he was at Petro Paulowski, in Kamschatka, where I hope to go, and served since on the lakes of Canada. I was at first inclined to think he was a stupid old man because he had a chin and took snuff; but he is as merry hearted as any young man, full of quaint dry sayings, always good humoured, always laughing, never a bore, takes his "pinch after dinner," plays a "rubber," and beats me at chess—and, he is a gentleman.

The second master Collins is the very essence of good nature, and I may say good humour. And now, good night, it is past eleven o'clock. I have written without stopping, all with the porcupine quill. God bless you!

6th. To-day Sir John Franklin showed me such part of his instructions as related to the main purposes of our voyage, and the necessity of observing

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everything from a flea to a whale in the unknown regions we are to visit. He also told me I was especially charged with the magnetic observations. He then told all the officers that he was desired to claim all their remarks, journals, sketches, &c., on our return to England, and read us some part of his instructions to the officers of the *Trent*, the first vessel he commanded in 1818, with Captain Buchan, on an attempt to reach the North Pole, pointing out how desirable it is to note everything, and give one's individual opinion on it. He spoke delightfully of the zealous co-operation he expected from all, and his desire to do full justice to the exertions of each.

To-day has been a gloomy day, as far as sunshine is concerned, and the wind has drawn round to the northward, though so little of it, that the old *Erebus* cannot keep her head the right way, or, as we term it, she "falls off," with the roll of the sea. Seven or eight large grampuses came shooting past us to the south-west, which Mr. Goodsir declared were delightful animals. Last evening a shoal of porpoises were bounding about the bows of the vessel as she plunged into the sea, and a bird called a mullimauk, a sort of peterel, which the Arctic people look for as a sign of going toward the icy regions.

At dinner to-day Sir John gave us a pleasant account of his expectations of being able to get through the ice on the coast of America, and his disbelief in the idea that there is open sea to the northward. He also said he believed it to be possible to reach the Pole over the ice by wintering at Spitzbergen, and going in the spring before the ice broke up and drifted to the south, as it did with Parry on it.

Towards midnight.—I can't make out why Scotchmen just caught always speak in a low, hesitating, monotonous tone of voice, which is not at all times to be understood—this is, I believe, called "cannyness." Mr. Goodsir is "canny." He is long and strait, and walks upright on his toes, with his hands tucked up in each jacket pocket. He is perfectly good humoured, very well informed on general points, in natural history learned, was Curator of the Edinburgh museum, appears to be about twenty-eight years of age, laughs delightfully, cannot be in a passion, is enthusiastic about all 'ologies, draws the insides of microscopic animals with an imaginary-pointed pencil, catches phenomena in a bucket, looks at the thermometer and every other meter, is a pleasant companion, and an acquisition to the mess. So much for Mr. Goodsir.

7th. 11 P.M —Pitching heavily, breeze increasing from W.N.W. It came on as the sun was thinking of setting, about nine, in the form of a bank, behind which he vanished; it then rose in the form of an arch, and I expected wind; but, having overspread the sky, it settled into a steadily increasing breeze. Barometer rising as rapidly as it fell, and I have been prognosticating a sort of gale in consequence. It was calm all last night, cloudy all to-day. Passed the day in working and making observations, when the sun did peep out, with Le Viscomte. There is nothing in this day's journal that will interest or amuse you at all events, and I am not in a humour for describing any more messmates.

8th.—I like a man who is in earnest. Sir John Franklin read the church service to-day and a sermon so very beautifully, that I defy any man not to feel the force of what he would convey. The first Sunday he read was a day or two before we sailed, when Lady Franklin, his daughter, and niece attended. Every one was struck with his extreme earnestness of manner, evidently proceeding from real conviction. We had a heavy sea and stiff breeze to-day; but it moderated at four o'clock, and the sun came out clear and beautiful. In lat. 62°, at nine o'clock this evening, we tacked (if you know what it is), and stood to the south-west. We saw a ship from Peterhead to-day.

10th.—I was beginning to write last night, but the ship was tumbling about

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to such an extent that I went to bed, and had to turn out again immediately and get the top-sails reefed, as it blew very hard in squalls. The ship pitched about as much as I ever saw any vessel, but still very easily. Reid says he does not like to see the wind "seeking a corner to blow into." I worked observations all yesterday, and to-day took several on deck. The weather moderated this morning, and all day we have had little wind and tolerably smooth sea. A clear, fine sunset at a quarter to ten, and Goodsir examining "molluscs," in a *meecroscope*. He is in ecstacies about a bag full of blubber-like stuff, which he has just hauled up in a net, and which turns out to be whales' food and other animals. I have been reading Sir John Franklin's vindication of his government of Van Diemen's Land, which was to come out a week or two after we sailed. He has ready all the sheets, and cuts up Lord Stanley *a few*, and says he is haughty and imperious.

Here ends, I find, my third sheet; so if you don't like your letter thus far pray don't read the following which *I intend* to write. There is nothing to interest you now, and we are not far on our journey, so I wind up this and call it a letter, just for the sake of adding that I am, as ever, yours, &c.

More of the 10th.—Crouch is a little, black-haired, smooth-faced fellow—good humoured in his own way; writes, reads, works, draws, all quietly. Is never in the way of anybody, and always ready when wanted; but I can find no remarkable point in his character, except, perhaps, that he is, I should think, obstinate. Stanley, the surgeon, I knew in China. He was in the *Cornwallis* a short time, where he worked very hard in his vocation. Is rather inclined to be good looking, but fat, with jet black hair, very white hands, which are always abominably clean, and the shirt sleeves tucked up; giving one unpleasant ideas that he would not mind cutting one's leg off immediately—"if not sooner." He is thoroughly good natured and obliging and very attentive to our mess. Le Viscomte you know. He improves, if possible, on closer acquaintance. Fairholme, you know or have seen, is a smart, agreeable companion, and a well informed man. Sargent, a nice, pleasant-looking lad, very good natured. Des Vœux I knew in the *Cornwallis*. He went out in her to join the *Endymion*, and was then a mere boy. He is now a most unexceptionable, clever, agreeable, light-hearted, obliging young fellow, and a great favourite of Hodgson's, which is much in his favour besides.

Graham Gore, the first lieutenant, a man of great stability of character, a very good officer, and the sweetest of tempers, is not so much a man of the world as Fairholme or Des Vœux, is more of Le Viscomte's style without his shyness. He plays the flute dreadfully well, draws sometimes very well, sometimes very badly, but is altogether a capital fellow.

Here ends my catalogue. I don't know whether I have managed to convey an impression of our mess, and you know me sufficiently to be sure that I mention their little faults, failings, and peculiarities in all charity. I wish I could, however, convey to you a just idea of the immense stock of good feeling, good humour, and real kindliness of heart in our small mess. We are *very* happy, and very fond of Sir John Franklin, who improves very much as we come to know more of him. He is anything but nervous or fidgety; in fact, I should say remarkable for energetic decision in sudden emergencies; but I should think he might be easily persuaded where he has not already formed a strong opinion.

Our men are all fine, hearty fellows, mostly North-countrymen, with a few man-of-war's men. We feared at Stromness that some of them would repent, and it is usual to allow no leave—the *Terror* did not. But two men wanted to see—one his wife whom he had not seen for four years, and the other his mother whom he had not seen for seventeen—so I let them go to Kirkwall, fourteen miles off. I also allowed a man of each mess to go on

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shore for provisions. They all came on board to their leave; but finding we were not going to sea till the following morning, four men (who probably had taken a *leetle* too much whiskey, among them was the little old man who had not seen his wife for four years) took a small boat that lay alongside and went on shore without leave. Their absence was soon discovered, and Fairholme, assisted by Baillie, and somebody or other, brought all on board by three o'clock in the morning. I firmly believe each intended coming on board (if he had been sober enough), especially the poor man with the wife—but, according to the rules of the service, these men should have been severely punished—one method being to stop their pay and give it to the constables, or others, who apprehended them. It struck me, however, that the punishment is intended to prevent misconduct in others, and not to revenge their individual misconduct—men know very well when they are in the wrong—and there is clearly no chance of any repetition of the offence until we get to Valparaiso, or the Sandwich Islands; so I got up at four o'clock, had every body on deck, sent Gore and the Sergeant of marines below, and searched the whole deck for spirits, which were thrown overboard. This took two good hours; soon after which we up anchor, and made sail out. I said nothing to any of them. They evidently expected a rowing, and the old man with the wife looked very sheepish, and would not look me in the face; but nothing more was said, and the men have behaved not a bit the worse ever since. I don't know why I tell you all this. I meant to go to bed when I finished the other sheet; but went to look at some beautiful specimens of crustaceous animals in the microscrope, one of which, about a quarter of an inch long, is an entirely *new* animal, and has a peacock's tail. Goodsir is drawing it. And now I must really say good night; it is past one o'clock.

11th and 12th.—All yesterday it blew very hard, with so much sea that we shipped one or two over the quarter-deck, by which I got a good drenching once. The sea is of the most perfect transparency—a beautiful, delicate, cold-looking green, or ultramarine. Long rollers, as if carved out of the essence of glass bottles, came rolling towards us; now and then topped with a beautiful pot-of-porter-looking head. At sunset the wind moderated, and was calm at night. This morning a fair wind until four o'clock, P.M., when thick fogs blew over at last, and settled this evening into a strong northerly breeze (fair for us), by which we are going on at a good rate, with another sea getting up in an opposite direction to the last, and between the two we are rolling somewhat. We are now only six miles from Iceland—south of it.

14th.—Yesterday evening the sea went down much, and the wind became very light. This morning the wind was quite fair, having been so more or less all night; but instead of having clear weather as with the north-east wind, it came to south-east and brought hard rain and thick fogs all day. We are now, however, (eleven P.M.), going seven knots and a quarter in a thick fog. with the *Terror* on one side and transport on the other, keeping close for fear of losing sight of us. To-day we arranged all our books in the mess, and find that we have a very capital library. Reid still amuses us. He has just told me how to boil salt fish when it is very salt. He saw the steward towing it overboard, and roared out:—"What are you making faces at there? That's not the way to get the *sarlt oout*." It appears, that when it boils it is to be taken off the fire and kept just not boiling. This is Saturday night. Reid and Osmar are drinking "Sweathearts and wives;" and they wanted me to join. I said I had not the one, and did not want the other. Good night.

———Nothing has been written for you these last few days—not because I had nothing to say, or did not think of you, but because I have

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had plenty to do in the writing and calculating way; and because, just as I was beginning to get paper and ink ready, I found I was in bed, and fell asleep. To day is "Waterloo-day," and we drank the Duke's health at Sir John's table. There was a talk before we left England of a brevet on this day; if this be true, I think it more than probable that I shall get the rank of Captain. With this idea, I took a glass of brandy and water at ten o'clock, which, allowing for difference of longitude, answers to half-past seven in London, and drank your healths, in petto—fancying you might be drinking wine. In fact, we took an imaginary glass of wine together, and I don't care how soon we may take a real one. Now I am laughing, for Reid has just said scratching his head—"Why, mister Jems, you never seem to me to sleep at arl; you're always writin!" I tell him that when I do sleep I do twice as much as other people in the same time. Now for the journal.

15th.—Wind fair and strong, with a high sea; but we carried on much sail, heeling over much; and we actually fancy we went nine knots. In the evening it moderated, and the weather was clear and cool.

16th.—Calm day, sea glassy smooth, cloudy weather, no sun. After breakfast I went on board the *Terror*, to see Captain Crozier about my "Fox" observations (Fox being a dipping-needle invented by him). Fairholme and Le Viscomte followed in the India-rubber boat, which was being tried when you came to Woolwich. Crozier and Little, first lieutenant, and lieutenant Griffiths, the agent for transport, dined on board with Sir John.

17th.—The sun shone out, and we had a smooth day; air cold. Since the 11th the thermometer on deck in the shade has never been above 50 degrees or below 45 degrees, night or day; generally 46 degrees or 48 degrees. At night cloudy, with a bright light on the horizon to the north-east, which Gore says is Aurora Borealis. Reid calls it "ice-blink." I say it is the reflection of sunset, though it is north-east. It looks like a large town on fire, twenty miles off.

To-day (18th) we set to work, and got a catalogue made of all our books, and find we have amongst us a most splendid collection. The "crow's-nest" is up—which is unusually a cask lined with canvas—at the fore-top-mast-head, for a man to stand in to look out for channels in the ice. With us it is a sort of canvass cylinder, hooped, and is at the main-top-gallant-mast-head (if you know where that is). Reid, who will have the peculiar privilege of being perched up there, says it is a very expensive one.

19th —Twelve o'clock at night. I suppose we are 140 or 150 miles from Cape Farewell. Blowing hard, but not a rough sea, although there is a swell. When I say hard, I mean fresh; we can carry much sail, and do. I can scarcely manage to get Sir John to shorten sail at all. Still cloudy. At half-past ten, a bright light appeared in the north-west, which was set down as Aurora, but turned out really to be the reflection of sunset. The clouds and mist moved off as if a blanket were being withdrawn, leaving an orange-coloured clearness underneath in the form of an arch with a well-defined dark horizon, which clearness turned out to be a real clear sky, cold looking and fine; and now the officer of the watch comes to tell me the wind is lighter, and we certainly are quieter. "Shake a reef out, set the fore-top-gallant-sail" (the main being set). "Call me at six if anything happens." Good night, good night!

24th.—In Davis' Straits. Cape Desolation at noon to-day, bearing east ninety miles, but we can't see it. We have just done with a glorious gale of wind, which has been sending us on in grand style. I wrote last on Thursday night, and shall sum up from thence. On Friday, the 20th (and Thursday night also, though I did go to bed so quietly), we kicked and plunged and danced in a tremendous manner, the sea running all manner of ways; the day was nearly calm, with a very heavy swell, the ship rolling deeply.

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A number of "bottle noses," a species of whale about twenty-eight feet long, came dancing about us; their head is very peculiar, and unless they are very close, so as to see their beak under water, one fancies their foreheads are snouts poked up above the water. All this night we jumped and danced again with a strong breeze dead foul for us, which at midnight had turned into a complete gale; the air cold, though the thermometer stood fixed at 42 degrees. On Saturday calm again, and smooth water. Molimaules, and trees with the bark rubbed off by ice, floating about. Sir John at dinner; most amusing with anecdotes of an Indian chief, whom he met in the journey in which he suffered so much—named, I think, Akatcho, who appears to have been a fine character.

Sunday, 22nd.—It began to blow hard suddenly at seven in the morning from east (you must recollect that our course is westerly). We struggled through the church service on the lower deck, the ships rolling and tumbling much, the sea curling astern beautifully.

Yesterday, 23rd.—We had the highest sea I ever saw; it was very fine. I know nothing finer than a gale of wind, particularly when you are running before it. We had a few seas on our decks, one of which found its way down on to our table, just as we had done dinner. I dined at our mess to-day, Sir John finding his guests could not hold on and eat too. We are packed close and can't move very far. But the good humour of everyone is perfect; and we do dance before it so finely—I mean before the wind. It rained hard all yesterday and all night, and this morning a glorious sun and a clear blue air sent us all up to dry ourselves and our clothes. We have gradually altered our course, and are now steering due north. At noon to-day Cape Desolation was due east ninety miles, so we are in Davis Straits. The sea is now moderately smooth and the wind still fair. I am writing this at half-past ten, in broad daylight. Sir John says that in his voyage to Hudson's Bay he passed the very spot we were on yesterday, and was sailing through ice. We have not yet seen ice or land. The sea is beginning to get colder. The air still at 41°, but to-day it felt delightfully cold. The monkey has, however, just put on a blanket, frock, and trowsers, which the sailors have made him (or rather her), so I suppose it is getting cold. Adieu for the present.

Wednesday, 25th.—At one this morning I was on deck looking at the west coast of Greenland and an iceberg—although the land was forty miles off; and the berg six or eight. We sailed along it before the wind until noon, and the thermometer, when I went on deck had gone down to 39°, though it still keeps at 42° in the day. The coast of Greenland looks rugged, and sparkling with snow, the shadows and ravines forming deep black marks: we regret not being a little nearer to see it better. This morning one snowy iceberg was to be seen a long way off. I am now writing, 11 P.M., lat. 63°, near about a place marked on the chart as Lichtenfells. The sea, as the sun set half an hour ago, was of the most delicate blue in the shadows; perfectly calm—so calm that the *Terror's* mast-heads are reflected close alongside, though she is half a mile off. The air is delightfully cool and bracing, and everybody is in good humour either with himself or his neighbours. I have been on deck all day, taking observations. Goodsir is catching the most extraordiuary animals in a net, and is in ecstasies. Gore and Des Vœux are over the side, poking with nets and long poles, with cigars in their mouths, and Osmar laughing; he is really an original, and a delightfully dry fellow. I am very sleepy and tired, but did not like to go to bed without writing on the first day in which we have seen Arctic Land. Reid says "We shall soon see the Huskimays," which he says are vulgarly called "Yacks" by the whalers, and "Huski's" for shortness.

[By the time our next number appears the Arctic ships fitting out for the

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command of Captain Sir Edward Belcher, will be on the point of departure. We shall then take care to preserve for our readers an account of them, with some observations on Arctic matters. In the mean time our Nautical Notices crowd on our hands, obliging us to give them our attention. —Ed.]

Nautical Notices.

Tides at Kampot.

Extract of a letter from Mr. G. D. Bonnyman to G. W. Earl, Esq,

Sir.—In consequence of your note to me last voyage I paid considerable attention to the Tides at Kampot, not being able to spare a boat on shore I attempted to obtain the exact rise and fall of the water by sinking a hollow tube, into which, a float attached to an index was inserted, but the plan would not answer on account of the strength of the tide. I had therefore, to trust to the deep-sea lead, by which the height of the ship's rail above the water was noted in feet and inches for every hour through the day, for thirty days. The result gives the time of high water at noon and midnight on full and change days; but there is very little difference in the time on any other day. The *set* also has no regularity, depending generally on the wind. Greatest rise two feet, velocity two and a half to three knots.

The variation by an inferior compass by the mean of numerous observations was 1° 50′ E.

I do not suppose the following is of much consequence, but as we are accustomed to be guided by the great Hydrographer, an error is as well corrected.

The passage to which I allude is in the account of Malacca (page 256, vol. 2, fifth edition), where it states that "Tanjong Cling" bears W. 8° N., outer extremity of Fishers Island W. 12° N. to W. 16° N. from the lighthouse. Any one who has been at Malacca will be convinced that this is erroneous, when he considers that Fishers Island opens out from the point soon after leaving the vessel to pull on shore, which could not be the case if it was to the northward as the above bearings would imply. In the older editions, the flagstaff is said to bear E. 14° N. from the Circular shoal, half a mile south of the island.

By a compass having 2° easterly variation, I made the flagstaff which is close to the light bear east; and with it bearing N. 89° E. by the same compass from a place about the middle of the island, the observed latitude was 2° 11′ N. This nearly agrees with the latitude assigned io it by Capt. Ross. If you thought them of any service, I shall be happy to send you the angles taken from the flagstaff and Fishers Island, I was induced to take them from having observed that the bearings of the various hills and islands never agreed, when working into the roads.

I am, &c.

Geo. D. Bonnyman.

Singapore, November 30th, 1851.

Regulations for the Port of St. Thomas.

1. No vessel is allowed to stand off and on, or to anchor in the out-bays without special leave.

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2. No vessel which has anchored outside Prince Rupert's Rock, is allowed to remain at anchor there longer than twenty-four hours, for which a special leave must be immediately applied, and which does not exempt the vessel from entering and clearing at the custom-house in the usual manner.

3. No vessel is allowed to anchor in front of the fort, so as to mask it, or prevent it from taking a range of the whole entrance to the harbour. The sterns of vessels anchoring to the eastward in the harbour, must, in consequence thereof, not lay more westerly than in a S.S.E. direction from the flagstaff on the fort, and the bows of vessels anchoring to the westward in the harbour not more easterly than S.b.W. from the same. When the cargo or part thereof, is intended to be entered for exportation, the vessel has to anchor to the eastward of the fort, or immediately to remove thereto. No vessel must leave the port after sunset, except with night pass.

4. No boats are permitted to take a rope from, or make fast to any vessel before she has anchored. No persons are permitted to go on board or leave a vessel before the captain of the port has been on board, and given such permission. By non-compliance herewith, the offender after summary investigation by the police-master, will be fined in a sum of 5 to 25 pieces of eight, according to circumstances.

5. To the captain of the port, shall be immediately reported whether there are any sick persons on board; if the vessel comes from a place where any contagious disease is prevailing; if any gunpowder, arms, or warlike stores are on board; and if there are any passengers. All persons are considered as passengers who are not proved to belong to the crew of the vessel.

If the captain of the port forbids a passenger to go on shore, the master of the vessel is answerable that such passenger does not leave the vessel before a permit from the police is obtained.

6. Ship's papers, manifests, and other documents concerning the articles and quantity of the cargo, must be delivered to the captain of the port on demand.

7. After the vessel is brought to anchor, the master has:—

First.—Within two hours to report himself at Christiansfort, which again must be done before the anchor is wayed or the vessel removed to another place, and before his departure he has to present there his custom-house clearance.

Second.—Within two hours after his arrival he shall deliver to the police office an exact list of the passengers who have arrived with him, under a penalty of from 25 to 200 pieces of eight.

Third.—And within twenty-four hours make an entry at the custom-house. Should he commence to discharge cargo before the vessels is entered at the custom-house, he will be liable to a fine of 300 dollars.

8. Vessels coming into the harbour after sunset must show colours the next morning at sunrise, and then immediately be reported to the fort; and, if any passengers on board, at the police-office before 9 o'clock.

In such cases the master may, when there is no sickness on board or at the place from whence he came, land passengers well known to him and entirely unsuspicious; but he is then responsible as well for accidents which may arise therefrom, as for the personal appearance of the passengers at the police-office on the following morning.

9. None of a vessel's crew may be discharged, or left on shore here without the police-master's permission, and every change of the crew shall be noted by the proper authority on the muster-roll, before the departure of the vessel.

Every person who may be on board when a vessel departs, shall, if belonging to the crew, be duly entered on the muster-roll of the said vessel by the

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proper authority, and if a passenger, be provided with a lawful passport, under a penalty of from 25 to 200 pieces of eight, to be paid by the master.

10. All vessels shall moor immediately after having anchored; the jib-booms must be rigged in, the spritsail-yard laid fore and aft, and every thing that might prevent vessels from warping or sailing in the harbour taken on board, and not again be rigged out until the vessel is hauled up and ready to sail.

No boats, stages or spars are permitted to lay astern of any vessel.

Anchors by which the vessel is moored must be provided with buoys and shortened buoy-ropes.

11. Except in extraordinary cases, no boats are permitted to discharge or load at any wharf after sunset; none of the crew of vessels lying in the harbour (masters and mates excepted) may be ashore after the evening gun has fired, unless they are provided with a pass from the police. After sunset no boats are allowed to lay at any other than the King's Wharf, and must not be detained for their officers later than 8 o'clock,

12. It is prohibited to warm pitch, tar, turpentine or oil on board; to throw dead animals overboard; to careen vessels for the purpose of scraping or cleaning the bottom. It is also prohibited to throw ballast overboard, liable to a penalty of from 150 to 300 Rdr. W. Ct., of which one third will devolve to the informer. A place for discharging ballast will be pointed out by the harbour-master.

13. It is not permitted to fire guns, musketry, pistols, or other fire-arms in the harbour after sunset, except in cases of distress.

14. Any one that loosens or cuts away a buoy, will be imprisoned immediately, and liable to the severest punishment.

15. No porter or labourer shall be employed without being provided with a written permission from the police-master, and his plate as ordered

16. When an alarm is fired, viz., two guns in quick succession from Christiansfort, the half of the crew of each vessel (or more when demanded) shall with the master or mate proceed to the King's Wharf, and there place themselves under the command of the captain of the port; when the alarm is fired on account of fire breaking out in the town, the crew shall bring with them two or three small sails, axes, buckets, boat-hooks, a running-tackle, and can-hooks.

17. Masters of vessels lying in the harbour, shall, whenever any of their crew are taken sick, make immediate report thereof, to the officer of health, who is to inspect that no other than regular physicians attend the patient. In every case where this order is neglected, the master of the vessel will be liable to a fine of 500 pieces of eight.

18. Masters of vessels bound for Danish ports, or for Hamburgh, shall report themselves at the post office eight days before they intend to sail.

19. All orders from the captain of the port with regard to order in the harbour, must be immediately complied with, as those who do not conform thereto will be punished according to the existing laws, and have to pay all expenses thereby incurred.

No excuse of ignorance of the existing laws, even those which may not be mentioned in these regulations, will be valid.

20. Every master of a vessel entering this port is to ask for a copy of these port regulations, for which he will pay three cents.

By order of the Government,

L. J. Rohde, *Captain of the Port.*

St. Thomas, January, 26th, 1838.

Proposed Lights.—Colonel Butterworth, if the sanction of the Bengal Government can be had, proposes to *anchor the Torch* light-ship, now at

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Calcutta, on *the 2½ fathom bank*, and to *erect a light-house* on *Tree Island*, if the money be subscribed; this is all that is required for the lighting of the Straits. We hope to see our mercantile community join in the movement, for we certainly are sitting here in utter darkness. The loss of the *Pacha*—the running ashore of the *Singapore* on 2½ fathom bank, and the continual loss of ships on the Paracels and Pratas will doubtless have their proper effect.

Fixed Light at Point Divy, Coromandel Coast.—We have just received the following from our esteemed correspondent Captain Biden, at Madras.

Madras Marine Board Office,
15th February, 1851.

Notice is hereby given that a fixed light, visible about twelve miles off, will be exhibited on and after the 1st of May next, from a column erected about two miles north-west of the low sandy extremity of Point Divy.

The following notice is taken from Lieutenant Fell's sailing directions for the Coromandel Coast; the spit therein alluded to having 1½ fathom on its south-eastern edge.

"Point Divy in lat 15° 57′ 40″ N., long. 81° 15′ 00″ E. Bears from Masulipatam Flag-staff S. 6° E., distant eleven miles and a half. This point is very low with a narrow sandy spit, extending from it about two miles and a half in a south-east direction. In rounding this point with a fair wind during the day vessels ought not to come under 6 fathoms till to the northward of it. Between Point Divy and False Point Divy the coast ought to be approached during the night with great caution, as the bank of soundings extends but few miles to seaward, having soundings of 100 fathoms, seven miles to seaward of a line of 6 and 7 fathoms.

"From Point Divy to Masulipatam the coast trends nearly north and is safe to approach to 4½ and 5 fathoms."

After the above date the light at Masulipatam will be discontinued.

By order of the Marine Board, St. John's,
J. Franklin, Secretary.

N.B—The Point Divy Light is eighty feet above the level of the sea.

Remarks on the Entrance of the River Min, with Directions for entering.—*By Commander Cracroft, H.M.S. Reynard.*

Vessels bound for the river Min will find excellent anchorage in the north-east monsoon under the White Dogs, where it is recommended they should wait for the proper time of tide before attempting the bar.

It is high water at the White Dogs, two hours before the tide has done flowing at Rees Rock: with a leading wind, therefore, vessels leaving the White Dogs about an hour before high water, are sure to carry the tide with them as far as Woga Creek (where the opium vessels are stationed); if bound higher up the river, and they cannot ensure the tide through the Kinpai Pass, it will be proper to anchor there, and wait for low water slack, before attempting to proceed further.

The flood tide sets to the southward, and the ebb to the northward right across the bar; in the north-east monsoon therefore, should the wind become scant after a vessel has passed the Knoll, the ebb will be a weather tide.

In his directions for entering the river, Capt. Collinson gives marks for passing the Knoll to the northward: since his survey was made, however, I have reason to believe this channel has narrowed considerably, and as these

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marks are also difficult to make out, I have never availed myself of them, but always taken the channel to the southward of the Knoll.

Pilots may be procured by sending in to the opium vessels in Woga Creek, but I have never employed one, and the following marks, which I have used ten times in H.M. late screw sloop, *Reynard*, during the years 1850 and 51, will lead a vessel safe through the south channel in the deepest water.

1st.—Bring the breakwater, a large remarkable rock, close to the White Dogs, a little to the right, or nearly under that part of the North island (Tong-sha) which resembles a dome flattened, and keep in that position, on about a S.E.b.E. bearing. As soon as the high land to the northward of the entrance of the river is clearly distinguished, the Sharp Peak in the foreground, which cannot be mistaken, will appear nearly in the centre of, but under, a gap formed by two very high hills in the rear; let the Sharp Peak be kept in this position, and after the White Dogs become too indistinct to be any longer a guide, this mark which will fill up the gap as the vessel closes the land, will bring her safe through the channel in the deepest water, as far as Rees Rock, which may be passed from half a mile, to a mile and a half to the northward, but the distance must be judged by the eye.

2nd.—Two islands, called the Brothers, apparently in the middle of the entrance to the river, and appearing, especially in hazy weather, like one island, will now be seen; the inner one has a whitewashed mark on its southern face; this mark kept open to the northward of the outer island, bearing about N.W.b.W.$\frac{1}{2}$W. will lead over the inner bar past Sharp Peak Point in the deepest water, should it be necessary to work in tack to the northward as soon as the mark appears to the southward of the outer Brother.

After having cleared the entrance, keep as nearly as possible in the centre of the river, as the mud banks shelve considerably; the only danger is a patch on the rocky ledge which extends nearly across the channel off Temple Point, and has only eight feet water on it at low water springs; this patch was discovered by Commander Luard, H.M.B. *Serpent*, in March 1851.

It is scarcely necessary to mention that the tides run very strong here, the ebb in the rainy season like a sluice for eight, and even nine hours; the rise and fall at springs is about eighteen feet at Temple Point.

P. Cracroft, *Commander R.N.*

Trinity-House, London,
6th January, 1852.

Notice is hereby given, that this Corporation having issued directions to the Masters and Mates of their several Light Vessels to the following effect, viz.—

In the event of any light vessel being driven from her station, the master or mate, whichever be in charge, is carefully to consider whether she has driven to such a distance, or in such a direction, as to make it dangerous to Shipping to continue to shew her Lights, and if the distance or direction be not such as to endanger the safety of Vessels running on their course, the Lights and Balls are to be continued in the usual manner.

But, should the Light Vessel have driven so as to be of no use as a Guide to Shipping, the usual Lights and Balls are, in that case, to be discontinued, and two Red Lights substituted, one at the end of the Davit forward, the other on a Stancheon beside the Ensign Staff; and a Red Flare Light shewn every quarter of an hour during the night.

And further, when vessels are observed from a Light Vessel to be in distress, or to require assistance:—

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If in the day time, two guns are to be fired on board such Light Vessel, each at an interval of five minutes, and repeated every half hour until assistance be observed approaching.

If in the night time, two guns are to be fired on board such Light Vessel, at similar intervals, each followed by a White Rocket thrown in the direction of the Vessel in distress, and these signals are to be continued until the required assistance has been rendered.

Masters of Vessels, Pilots, and other Persons are earnestly requested to take such necessary note of these Regulations as may be useful both for the avoidance of danger to themselves, and for aiding their endeavours to render assistance to others.

Manning the Navy.

The following return to an order of the House of Commons, dated 18th February, 1852, for copy "of the recent Correspondence between the Admiralty and the Treasury, on the subject of the formation of a reserve of Seamen for manning the Navy," has just been published:

Admiralty, 10th Feb., 1852.

Sir,—I am commanded by my Lords Commissioners of the Admiralty to state to you, for the information of the Lords Commissioners of her Majesty's Treasury, that the measures necessary for manning the fleet in case of any emergency have from time to time been under the serious consideration of this Board.

The Lords of the Treasury will be fully aware of the deep importance of the subject, and the many difficulties that surround it, but my lords do not consider that these difficulties should deter them from bringing before parliament proposals for an arrangement, which may at the same time tend to the advantage of the country and of the maritime population, by rendering less necessary the recurrence to impressment.

As a first step their lordships propose to raise by voluntary entry a "naval reserve," composed of able seamen, whose services may be immediately available in case of need.

The proposed reserve to consist of—

200 petty officers of the 1st class.
800 ditto ditto 2nd class.
4,000 able seamen.

The petty officers to be entered in the "reserve," shall have served a period of not less than six years, and the able seamen not less than three years in her Majesty's service, with certificates of good conduct.

All men entered for the "reserve" to be borne on the books of a ship in commission, and furnished with leave tickets, renewable at the end of every year so long as they are retained.

The reserve men shall be at liberty to serve in a merchant ship, provided their voyages are confined to the home trade Shipping, as defined by the act 13 and 14 Vict., c. 93, s. 2; they shall also be liable to be called out from time to time for such periods and in such proportions as the Admiralty may direct.

When called out for active service, they shall be liable to be retained for a period not exceeding five years, and at the expiration of that time shall not be liable to compulsory service in the navy.

Reserved men shall not be liable to ballot for the Militia while retained.

Their service in the Royal Navy will count towards pension and Greenwich

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Hospital, the same as that of seamen of the fleet, and two years on the reserved list, shall be considered equal to one year's service at sea.

First-class petty officer shall receive		12*l.* a year.
Second class	ditto	9 ,,
Able seamen	ditto	6 ,,

Reserve men shall attend at the most convenient ports and stations at the end of every three months, and after being duly inspected by a coast guard officer, shall receive the quarterly payment.

Their lordships are aware, that in an arrangement so entirely new, it will be necessary that the Board should retain the power to make such regulations from time to time as experience may suggest.

It will also be advisable to admit the entry of able seamen who have not served in her Majesty's navy, in case the number proposed be not completed from those who have served.

The estimated expense of this arrangement is as follows:—

200	1st-class petty officers,	at 12*l.*	per annum	£2,400
800	2nd ,,	,, at 9	,,	7,200
4,000	able seamen ,,	at 6	,,	24,000
				£33,600

As their lordships propose that the arrangement and machinery shall be worked through the officers of the coast guard, they apprehend that the expense for management will be small; but in order to cover the expense of calling out the reserved men for a short time for the purpose of inspection or drill, their lordships propose to add a sum of £5,000 for contingencies, making a total of £38,600

The Lords of the Admiralty request the sanction of the Lords of the Treasury for making provision for this sum in the naval estimates, under the first vote.

I have, &c.,
(Signed) J. Parker.

The Right Hon. W. G. Hayter, M.P., Treasury.

Treasury Chambers, 13th Feb., 1852.

Sir.—With reference to Captain Hamilton's communication of the 10th inst., I have it in command to acquaint you, for the information of the Lords Commissioners of the Admiralty, that the Lords Commissioners of her Majesty's Treasury are pleased to approve of the measures therein proposed for manning the fleet in case of any emergency, and to sanction provision being made in the naval estimates, under the first vote, for the sum of thirty-eight thousand six hundred pounds, (£38,600,) for the purpose of carrying the same into effect.

I am, &c.,
J. Cornewall Lewis.

The Capture of Lagos, by Commodore Bruce's Squadron.

Intelligence reached us on Monday last of the capture of Lagos, by Commodore Bruce. The *Sampson*, steam frigate, Captain Jones, was sent home with the despatches, and reached Lisbon on the 11th, when the Royal mail packet *Severn* was leaving for Southampton, who transferred her despatches to the packet, and Lieutenant Scrivener, the Naval agent, delivered them to the Admiralty.

The following is the official account of the affair as gazetted:—

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"*Penelope, off Lagos, Jan.* 2, 1852.

"SIR.—I have the honour to report, for the information of the Lords Commissioners of the Admiralty, that their Lordships' instructions of the 14th October, and the wishes of Her Majesty's Secretary of State for Foreign Affairs, as far as respects Lagos, have been most faithfully fulfilled by the expulsion of the slave-dealing chief, Kosoko, and his people, the utter destruction of his town, and the establishment of the friendly chief Akitoye, with his followers, in the seat of power at Lagos.

"By my letter, No. 216, of 1851, their Lordships are aware that Kosoko very recently rejected the proffered friendship of England, and that he opposed with fire and sword the approach of a flag of truce proceeding to his seat of government with Mr. Consul Beecroft, who offered to negociate and to advise with him, and who was merely attended by an escort of armed boats, scarcely problematically sufficient for his personal safety among savages.

"I, therefore, determined to send a strong and well-organised force to punish this refractory chief, and having through the untiring energy and exertions of Mr. Beecroft, procured the attendance of Akitoye, and nearly 500 of his followers, near the scene of action, ready to take advantage of a clear sweep when we should make it, I concerted measures with Captain Lewis I. Jones, of the *Sampson*, and Captain Henry Lyster, of this ship, who both were volunteers on the occasion, and entrusted the detail and execution of the service to Captain Jones, seconded by Captain Lyster, and their Lordships will see from the accompanying reports, the complete success with which the enterprise has been crowned.

"I am at a loss to do justice to the chivalrous bearing and devoted bravery of these two Officers; Captain Jones, who, commanding the expedition, was no less conspicuous for his gallantry and firmness than for his judgment and energy; and Captain Lyster, who, finding himself, by unavoidable circumstances, exposed in the *Teazer* to be summarily destroyed by the enemy's guns, made a noble rush into the midst of armed men on shore, and with his undaunted followers spiked the obnoxious guns, and turned the fortune of the day at that point. It is to be borne in mind that our people could expect no quarter, nor did they get any.

"I should come short of my duty did I not bring before the notice of their Lordships, the ardent and devoted gallantry exhibited during this very severe affair by officers and men. The responsible part which Captain Lyster filled cost him a severe wound, happily not dangerous. Commander Hillyar of this ship, who was charged with him, is severely but not dangerously wounded. Lieutenant Edward Marshall and F. D. Rich, each in command of a paddle box boat, exhibited heroism and firmness never surpassed. Lieutenant John Corbett, in command of Mr. Beecroft's iron boat with rockets, with his own hands spiked the guns, receiving a shot in his arm after doing so, and had five severe wounds before the affray ended. Lieutenant Williams, R.M.A., was dangerously wounded, and Mr. Frederick Fletcher, Midshipman, commanding one of the cutters appointed to guard the boats when on shore, defended them to the last, and fell with two balls in his forehead. With the other division Lieutenant Saumarez, of the *Sampson*, received a dangerous wound while encouraging his men; and Mr. Richards, Midshipman of that ship, got his death wound. The conduct of Lieutenant Patey, commanding the *Bloodhound*, and Lieutenant Larkin, commanding the *Teazer*, and the success attending their efforts is beyond all praise; besides their annihilating fire, their vessels were a rallying point for the respective divisions of boats, and were conspicuously instrumental in the attainment of victory, reflecting infinite credit on all belonging to them. Commander Coote, of the *Volcano*, and Commander Gardner, of the *Waterwitch*, with their detachments, contributed, as soon as they arrived, to the labours of the hour with an energy and zeal well worthy of them.

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"Nothing could exceed the devotion of the Officers of the Medical Staff to the exigencies of the day. Mr. Richard Carpenter, Surgeon, Mr. Walling and Mr. Sproule, Assistant-Surgeons, of this ship; Dr. Barclay, Acting Surgeon of the *Sealark*, and Mr. Morgan and Mr. Pendrith, Assistant-Surgeons of the *Sampson*. Wherever a man was struck in the boats, a Medical Officer was immediately by his side, setting their own lives at nought when compared with the wants of their brave companions in arms. Mr. Walling and Mr. Sproule landed at the charge, with their comrades, under Captain Lyster.

"Mr. Beecroft, during all these operations, was on board the *Bloodhound*, and gave every assistance that his advice and experience could afford.

"I cannot withhold the expression of my regret for the very severe loss which has attended this achievement, but in which, I trust, their Lordships will feel that the dignity of England has been asserted, and the honour of the flag gloriously sustained. The enclosures with this dispatch will afford all further information.

"I have, &c.,
(Signed) "R. W. Bruce, Commodore and Commander-in Chief.

"*The Secretary of the Admiralty.*

Narrative of the Captivity and Release of the "Violet," by Pirates of the Riff Coast.

The Peninsular and Oriental steam ship *Madrid*, which arrived at Southampton on Thursday evening, brought four seamen belonging to the brigantine *Violet*, of Wisbeach, of 230 tons, which was captured and burnt by the Riff pirates. The following is a narrative of one of the four seamen, named Henry Taylor:—

We left Glasgow on the 1st of May, 1851, bound to Malaga, laden with coals and iron; our crew consisted of seven hands—and arrived there on the 16th; left in ballast for Galatz on the 6th of June; arrived there on the 6th of August and loaded with Indian corn from Messrs. Rosetta and Co., and were consigned to order, calling at Queenstown or Falmouth. When off Carthagena experienced a heavy gale from the westward, which lasted five days, and finding we had sprung our foremast we made the land for shelter. On the 3rd of October, when about fifteen to twenty miles from the shore, it became a dead calm. On the afternoon of the 5th, observed four boats stealing from the shore towards the ship. When they arrived within about 300 yards, they laid upon their oars; there appeared to be about thirty-five in each boat, armed to the teeth, and opened fire upon us. Captain Layton received three wounds, one shot having pierced his left shoulder, another through the palm of his left hand, and the third taking off the top of his middle finger. We then went below; James Glen and the wounded captain in the forepeak. Emanuel Francis in the forecastle, Mr. Cross (the owner), myself, Edward Hall, and William Scrivener in the main cabin. The pirates continued firing till they boarded us. Immediately after they were on board James Glen heard a single shot, and Emanuel Francis exclaimed "Oh, Lord!" That same night Edward Hall saw the body thrown overboard naked. The pirates compelled the crew to work the ship to the shore, holding swords and guns to our throats. Owing to the wind being light the ship was at times unmanageable. It took us three days to reach the land, when they made us cast anchor and furl the sails. We were then taken on shore at the Riff Coast, and conducted under guard about two miles to a village containing about twenty-five houses. We were put into an outhouse, under guard of several armed Moors. The next day we observed several mules and asses loaded with corn coming from the direction of the ship; also portions of her running gear. When we had been prisoners three days one of the chief Moors took James Glen, myself, and William Scrivener to the beach. We

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observed the ship was light, both masts cut away and hanging over the sides, and the bulwarks torn away. We never saw any more of the ship, till in about four or five days we observed a large fire in that direction, which we supposed to be our unfortunate ship. And about nine days we were taken two days' journey further to the westward, to the house which we afterwards discovered to be the Shereef's, from whence we were sent out to labour in the fields. Our food had been barley bread and onions at first, and subsequently figs and raisins were added. All this time we had to sleep upon the damp clay ground, upon a yarn mat without covering, it being the rainy season and extremely cold. On the 14th Mr. Cross was taken ill with cramps, and after two days' severe illness died on the afternoon of the 16th. We buried him at the foot of a mount in the vicinity, having a little liberty owing to the return of the Shereef. From that time Captain Layton grew gradually worse, his wounds mortifying, and having no assistance from the Shereef or people. He died on the 24th, and we buried him alongside ot poor Mr. Cross. We were kept in captivity for three months, till we were ransomed through the agency of the Consul-General, Mr. Drummond Hay. That gentleman's messenger had been for six weeks negociating our release. It appeared that we had fallen into the hands of the Shereef "Adda of the Reef," whose territory consists of several small villages, furnishing a great number of boats along the coast, and about 1500 or 1600 fighting men. Every house had nine or ten inhabitants, who seemed to live by piracy. I went into the Shereef's house two or three times, and observed four large boxes of silver coin, and two of other coin. There were innumerable ship's stores and arms and instruments, as guns and weapons, sextants, quadrants, two anchors, one of which was marked "Shields." Mr. Hay's negotiation having been successful we were sent in a large boat to Tangier, where we arrived on the 10th of January, and the next day were put on board H. M. steam ship *Dragon*, and conveyed to Gibraltar, where the Governor did us the favour to invite us to dinner. From Gibraltar we were taken on board H. M. steamer *Janus*, Lieutenant Powell, accompanied by Captain Giffard, of H. M. S. *Dragon*, to point out the localities of the Riff Coast, for the purpose of finding out the haunts of the pirates. When about a short distance from the place where the *Violet* was taken ashore, the Moors fired two shots, and waved white flags. The steamer having been ordered not to make a descent, but merely to survey the coast, with a view to future operations, returned to Gibraltar. We embarked on board the Peninsular and Oriental Company's steamer *Madrid*, on the 23rd, and arrived at Southampton at 8 P.M. on the 29th.

Captain Layton had been master of the *Violet* about eighteen months, and was engaged from Newport, Monmouthshire. He leaves a widow to mourn his loss. Emanuel Francis, was brother to Mrs. Layton, and aged 22. He was the whole support of his widowed mother. Mr. Edward Bailey Cross, the owner of the unfortunate *Violet*, was the second and youngest son of the late Rev. Samuel Cross, Vicar of Hunstanton, in the county of Norfolk. He was cut off in his 30th year.

Testimonial to Henry Grinnel, Esq.

It is with no little pleasure that we learn that the proposed national token to this gentleman, for his humane and liberal conduct in sending out ships for the search of Franklin, is being responded to, in various parts of the country; and it is highly satisfactory to find those of our own service are early supporters of the laudable undertaking. Indeed it may be said to have originated with them, the Arctic officers having been the first to suggest it.

Among the various contributions, we are glad to announce, that Captain Martin and every officer of every rank in H.M.S. *Prince Regent*, have subscribed a day's pay, which we trust will be followed by every ship in the Squadron. The whole of the officers and men in the Coast Guard Service at Sheerness, have done the same, and we have little doubt the subscriptions will be general throughout the fleet. They are received at all the principal bankers, at the ports, and at Coutts and Co., and Herries and Farquhar.

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Table LXXV.

For reducing French Metres to English Fathoms and English Fathoms to French Metres.

1 French Metre = 0·5468165 English Fathom.
1 English Fathom = 1·82876696 French Metres.

Metres or Fathoms.	English Fathoms.	French Metres.	Metres or Fathoms.	English Fathoms.	French Metres.	Metres or Fathoms.	English Fathoms.	French Metres.
1	0·547	1·829	40	21·873	73·151	79	43·198	144·473
2	1·094	3·658	41	22·419	74·980	80	43·745	146·301
3	1·640	5·486	42	22·966	76·808	81	44·292	148·130
4	2·187	7·315	43	23·513	78·637	82	44·839	149·959
5	2·734	9·144	44	24·060	80·466	83	45·386	151·788
6	3·281	10·973	45	24·607	82·295	84	45·933	153·616
7	3·828	12·801	46	25·154	84·123	85	46·479	155·445
8	4·375	14·630	47	25·700	85·952	86	47·026	157·274
9	4·921	16·459	48	26·247	87·781	87	47·573	159·103
10	5·468	18·288	49	26·794	89·610	88	48·120	160·931
11	6·015	20·117	50	27·341	91·438	89	48·667	162·760
12	6·562	21·945	51	27·888	93·267	90	49·213	164·589
13	7·109	23·774	52	28·434	95·196	91	49·760	166·418
14	7·655	25·603	53	28·981	96·925	92	50·307	168·247
15	8·202	27·432	54	29·528	98·753	93	50·854	170·075
16	8·749	29·260	55	30·075	100·582	94	51·401	171·904
17	9·296	31·089	56	30·622	102·411	95	51·948	173·733
18	10·843	32·918	57	31·169	104·240	96	52·494	175·562
19	10·389	34·747	58	31·715	106·068	97	53·041	177·390
20	10·936	36·575	59	32·262	107·897	98	53·588	179·219
21	11·483	38·404	60	32·809	109·726	99	54·135	181·048
22	12·030	40·233	61	33·356	111·555	100	54·682	182·877
23	12·577	42·062	62	33·903	113·384	150	82·022	274·315
24	13·124	43·890	63	34·449	115·212	200	109·363	365·753
25	13·670	45·719	64	34·996	117·041	250	136·704	457·192
26	14·217	47·548	65	35·543	118·870	300	164 045	548·630
27	14·764	49·377	66	36·090	120 699	350	191·386	640·068
28	15·311	51·205	67	36·637	122·527	400	218·727	731·507
29	15·858	53·034	68	37·184	124·356	450	246·067	822·945
30	16·404	54·863	69	37·730	126·185	500	273·408	914 383
31	16·951	56·692	70	38·278	128·014	550	300·749	1005·822
32	17·498	58·521	71	38·824	129·842	600	328 090	1097 260
33	18·045	60·349	72	39·371	131·671	650	355·431	1188·618
34	18·591	62·178	73	39·918	133·500	700	382·772	1280·197
35	19·139	64·007	74	40·464	135·329	750	410·112	1371·535
36	19·685	65·836	75	41 011	137·158	800	437·453	1463 074
37	20·232	67·664	76	41·558	138·986	900	492·135	1645 890
38	20·779	69·493	77	42·105	140·815	1000	546·617	1828·767
39	21·326	71·322	78	42·652	142·644			

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SAILORS' HOMES.—We are glad to learn that Sailors' Homes generally appear to be most successful; that at Portsmouth especially so, as the patronage which it continually receives amply proves. It appears to be always full. We understand that Mr. Montague Gore, the late member for Barnstaple, author of an excellent pamphlet on the subject of those valuable institutions, Sailors' Homes, lately visited the Portsmouth Home, in company with Capt. W. H. Hall, and was much delighted with the arrangements made for the comfort of the seamen in the Home. It was pleasing to see the inmates of the Home, some of whom were shipwrecked seamen just landed from her Majesty's sloop *Pilot*, happy and comfortable, and to hear from the zealous and able superintendent, Capt. Johnston, the very successful working of the establishment, and the great benefit it has already been to thousands of our men-of-war seamen, particularly lately to the crew of H.M.S. *Britannia*, Capt. Goldsmith. Upwards of 600 of the crew, while the ship was fitting out at Portsmouth, made it their home when on shore on leave. As a proof of the very high opinion that Admiral Deans Dundas has formed of the Portsmouth Sailors' Home, on the morning that the *Britannia* proceeded to sea for the Mediterranean, the gallant admiral forwarded through Capt. Hall, a donation of £5 to that establishment.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory, From the 21st of January, to the 20th of February, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter		Wind. Strength		Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
		In Dec	In Dec	°	°	°	°						
21	W.	29·96	29·78	39	45	33	51	S	SW	2	5	bc	qor (4)
22	Th.	29·30	29·30	41	44	40	47	SW	SW	6	6	qbcp (1	qbc
23	F.	29·49	29·63	35	42	34	44	SW	W	2	2	bc	bc
24	S.	29·83	29·71	41	44	34	45	SW	SW	6	7	qor 2)	qor (3) (4
25	Su.	29·72	29·82	36	46	34	47	S	S	4	5	bc	bcp 3 3
26	M.	30·06	30·04	39	47	37	49	S	SW	2	4	b	bc
27	Tu.	29 58	29·48	45	43	43	46	SE	SW	6	2	qbcp 2)	or 3
28	W.	29·77	29·86	35	41	33	43	SW	NW	1	2	of	bcm
29	Th.	30·10	30 06	33	43	30	44	SW	SW	1	3	bc	bc
30	F.	29·60	29·68	43	46	37	51	SW	NW	6	5	qor (2)	qbc
31	S.	29·93	29·73	39	43	33	51	SW	S	1	5	or (2)	or 3 4
1	Su.	29·78	29·88	52	54	50	55	SW	W	4	4	o	b
2	M.	30·04	30·00	51	53	43	53	SW	SW	3	4	o	o
3	Tu.	30·05	30·08	38	47	38	48	SW	W	3	4	bc	b
4	W.	30·10	29·96	44	48	37	49	SW	SW	5	5	qop (2)	qop 3
5	Th.	29·75	29·72	54	51	47	55	SW	SW	6	6	qor 2)	qor 3
6	F.	29 68	29·85	45	45	44	48	W	NW	5	5	qbc	qbcp 3
7	S.	30·15	30·15	36	45	33	47	W	W	2	2	b	o
8	Su.	29·74	29·56	48	52	42	54	SW	SW	3	5	op (2	qbcr 4
9	M.	29·15	29 32	43	43	39	44	NW	N	6	5	qbc	qbcp 3
10	Tu.	29·64	29·84	34	41	29	43	N	N	4	6	qoprs (2)	qbc
11	W.	30·10	30·11	33	39	30	40	N	NE	2	2	bc	bc
12	Th.	30·00	29 90	30	38	25	39	SE	SE	2	3	b	bc
13	F.	29 58	29·63	34	37	30	39	SE	SE	1	2	o	bc
14	S.	30·05	30·13	36	41	33	42	SE	SE	1	1	o	o
15	Su.	30·21	30·15	38	47	32	48	SW	SW	2	2	o	o
16	M.	30·17	30·08	39	47	36	48	SW	W	2	4	o	od 4
17	Tu.	29·88	29·85	51	54	43	55	W	W	3	5	o	qbc
18	W.	29·60	29 64	41	43	40	44	NW	NW	6	8	qbcp (1)	qbc
19	Th.	29·81	29 85	34	38	31	39	N	N	4	6	bc	qbc
20	F.	30·13	30·14	29	35	27	36	N	N	5	5	qb	qbc

January, 1852.—Mean height of the barometer = 29·731 inches; mean temperature = 40·9 degrees; depth of rain fallen = 3·x2 inches.

TO CORRESPONDENTS.—The supplementary plate describing the mode of lowering Berthon's Boat not being ready with this number will appear in our next. The Arctic Miscellany received too late for our present number.

Hunt & Son, Printers, 6, New Church Street, Edgware Road.

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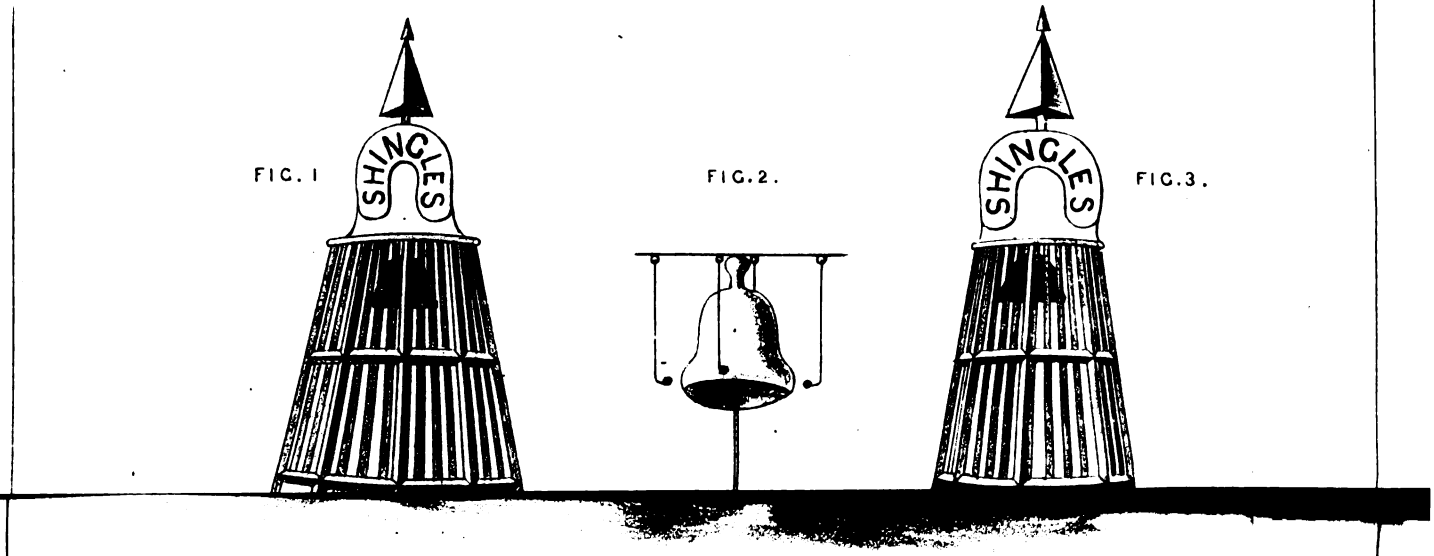

CROPP & BURGESS LITHOG.rs SOUTHAMPTON.

CAPTAIN PEACOCK'S REFUGE BUOY BEACON.

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THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

APRIL, 1852.

A Light on the Basses considered.

Mr. Editor.—The subjoined correspondence affords ample testimony of the necessity of erecting a lighthouse on the Basses, and may be considered as a very material advance towards the attainment of that important object. With such a prospect of a successful result to the strenuous exertions which I have made, it is my bounden duty to promote and forward so desirable an event through the medium of the press; and I am confident that a due consideration of the imminent danger incurred by all ships and vessels which, on their onward course from the eastward and the westward, must round the Great and Little Basses, will carry a full conviction of the urgent necessity of guarding against so hazardous a risk.

The occasional and indeed unexpected disasters which arouse public attention, ought to afford useful lessons of dear-bought experience; but if we all slumber at the port of vigilance, some fearful and frightful catastrophe may be suddenly announced, and at once proclaim the neglect and indifference to that warning voice which, if attended to in due time, might have averted so terrible a disaster, and imagination can vividly pourtray the direful consequences of shipwrecks on either the Great or the Little Basses.

Experience has shown that the dread and apprehension of so disastrous

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an event has, in many instances, most happily led to escape, because those well known and terrible rocks induce more than an ordinary precaution, and commanders of ships and vessels are so fully aware of the perilous position to which they may be driven, that they haul off, and give them a very wide berth. But, Mr. Editor, we should bear in mind that the safety of navigation, the security of life and property, and the speedy transmission of public mails should not be so placed in jeopardy, because on some dark and boisterous night, the utmost skill and vigilance, the utmost care and precaution may be set at nought, and without a well known beacon to mark his guarded way, the mariner may be baffled in all his anxious endeavours, and wrong in all his calculations, until the reality of danger is fearfully manifested by the cry of breakers ahead.

The only argument that may, by force of prejudice and opposition, be adduced against the erection of a lighthouse on the Basses, can arise from that confidence which is reposed in an improved system of navigating and managing ships and steamers, and the length of time since the occurrence of any serious disaster on the Basses. Such an argument is at once set aside by the correspondence herewith, to which I can add the concurring testimony of the late Rear-Admiral Inglefield, of Commodore Sir Henry Blackwood, and every other naval officer with whom I have been in communication—whilst Commodore Lambert who is well acquainted with the Indian Seas says, (in a letter to my address, dated 24th of July last,) "I am glad to perceive that you are at work again on having a light placed on the Basses. There is no place in my opinion, where one is so necessary, and if not soon attended to, we shall see one of the Company's steamers lost on these rocks;"—and when Captain Darke forwarded me the letter herewith from his brother officers, he said, "It would take me too long a time to give you an account of all the hair-breadth escapes experienced by many of those who have signed this memorial, but I do trust that 'ere long, a good light on the Basses will relieve us commanders from many hours of anxiety, which all must experience who may pass the Basses unguarded as they are by any light or beacon."

By the last mail, I had the pleasure to receive a letter from Mr. Hume, M.P., dated the 16th August, in which he urges me to persevere in my endeavours to obtain a light on the Basses, and renews the promise of his influence and support. He has also forwarded me some valuable and interesting documents on the lighthouse system, compiled by Mr. Alexander Gordon, C. E., whose zealous and indefatigable labours are continually directed towards the improvement and extention of lights in all parts of the world: as those documents are, in a maritime point of view, of considerable importance, I will take an early opportunity of laying them before the public.

I am of opinion that the next step in furtherance of the project should be a careful survey of both the Great and the Little Basses, because, my friend Captain Harris, has brought to my notice, that the distance of the two extremes, from N.E. to S.W., is at least twenty-six miles, whereas in Horsburgh's Directory, it is mentioned that they are only twenty-one miles assunder. Captain Harris's statement, differs very slightly

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from the relative positions assigned by Lieutenant Raper, R.N., in the third edition of his very able elementary treatise on navigation, which contains a most valuable table of maritime positions deduced from the late surveys.—

The Great Basses.

Lieut. Raper, R.N.		Capt. Harris, H.C.S.	
Lat.	6° 11′ N.	Lat.	6° 10′ 25″ N.
Long.	81° 32′ E.	Long.	10° 32′ 26″ E.

The Little Basses.

Lat.	6° 26′ N.	Lat.	6° 24′ 15″ N.
Long.	81° 52′ E.	Long.	81° 55′ 00″ E.

Now, although there can be no doubt that a light at the same elevation, and of the same brilliancy, as the Madras light is discernable from the mast-head of a ship (in ordinary weather) beyond the distance of twenty-one miles, yet when we take into consideration the hazy and occasional thick weather off the Basses, it is obvious that some doubt and uncertainty would prevail, which, where beacons are concerned, should be most carefully avoided.

Under all these circumstances, it is advisable to take counsel from the following information, for which I am very much indebted to my friend Captain Harris, of the P. and O. S. N. Company's ship, *Hindostan*, to whom, another old friend of mine, Captain Stuart, Master Attendant of Colombo, has thus written:—

"I thank you for the information you kindly sent me regarding the Basses: your suggestion of a floating light accords with the recommendation of the late Captain Sir J. G. Bremer, R. N., of Her Majesty's ship *Tamar*, and the late Captain Dawson, of the Royal Engineers, who, personally inspected and reported on the Basses, in 1826. I remember reading their report and talking over the matter with my late friend Captain Dawson, and so far as my memory serves me, they recommended a beacon being placed on the Great Basses, and a floating light between the two Basses. The copy of their interesting report has been missing for some time from the records of Ceylon, but, it is possible our friend Captain Biden may find a copy of it at Madras."

The situation of the Great Basses assigned by you, agrees with that I had given it, which is founded on the best information I could obtain; not so that of the Little Basses, your position of them, being two miles to the eastward of the spot I intended to assign them. I have, however, adopted your longitude, not only as being the most likely to be correct, but decidedly the most safe.

From the enquiries I have made, I do not think there there is any copy of the report referred to by Captain Stuart in either of the public offices here, but the *Nautical Magazine*, of July 1848, states as follows:—

A report of Captains Bremer and Dawson says—"The Great Basses, on the south-east coast of Ceylon, *consists of two small fields of red granite, each of sixty to seventy feet in breadth, and* 120 *or* 130 *feet*

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long, the utmost rise of which above the level of the sea is nine to ten feet."

"There is a considerable underwater connection between the two, and breakers extending to north-east and south-west, about 800 yards in all of broken water.

"The sea, particularly from the southward, is broken at fifty yards distance. The easternmost or outermost of these rocks, is in 81° 39′ 28″ east, and 6° 11′ 48″ north, about eight miles from the main land, having a clear passage all round them, and a depth of never less than three and a half fathoms, with fifteen or twenty yards inside, and fifty yards outside them.

"Recommend a beacon on the outer rock.

"The Little Basses, in 6° 25′ 53″ north, and 81° 58′ 25″ east, are far more dangerous in their nature, the shoal water extending beyond them fully three miles, and in a manner and to an extent not laid down in any chart, or mentioned in any account of them. At that distance a spot was found with only four and three-quarter fathoms, and much broken ground with five to six and a half fathoms, where soundings are laid down as nineteen fathoms.

"A point bearing N. 60½° W. from the Little Basses, also recommended as a site of a lighthouse, and about six miles to the westward of the Kombochan river, barred at its mouth, or a floating light inside the reef."

In all probability, the foregoing is only a brief abstract from the original: it is, however, of considerable importance, because it proves that there is ample space and a solid foundation on the Great Basses for the construction of a lighthouse on any scale, and it shows that the Little Basses are more dangerous and extensive than is generally supposed. The longitude of both shoals varies from their position as noticed above, but that difference may be owing to the former erroneous longitude assigned to Point de Galle and other remarkable places on the Malabar and Coromandel Coasts which have subsequently been rectified. It is worthy of remark, that those talented officers who inspected the Basses, were somewhat inclined to recommend placing a light on the coast adjacent to the Little Basses, but that remarkable haze which is frequently known to obscure the most conspicuous land-marks by day, would so dim the illumination by night, as to render it a very difficult matter to conjecture the distance from which it might be visible—and as the soundings are so irregular that no reliance can be placed on their aid, it is obvious that a light intended to guard vessels from so very dangerous a reef of rocks as the Little Basses, should be so situated as to give the mariner the most perfect confidence in his approach towards it,—and all persons who have well considered this question agree with me, that a light on the coast could not be depended upon as a sure and certain guide, and that such a plan is decidedly objectionable.

A reference to my former communications on this subject will show that under an impression that the distance from one extreme of the Basses to the other, is not beyond twenty-one miles, I considered that a tower on the Great Basses, on which a first-rate light should be ex-

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hibited at an elevation of 150 feet above the level of the sea, would ensure such a range of illumination as would give full security to an approach from the northward and eastward to the Little Basses; but as it is proved that the distance is at least twenty-six miles, it is evident that one light will not ensure under its guidance, a safe approach to the Little Basses, which, from the scattered rocks, some just above and others below the surface, is the most dangerous shoal of the two. Therefore, with infinite obligations to both my friends, I do most readily avail myself of the suggestion offered by the mention they have made of a floating light, and unless it should be ascertained that there is a good foundation for a lighthouse on the Little Basses, which is doubtful, I would recommend that a staunch vessel should be provided and moored in the best and most sheltered position in the vicinity of the Little Basses, on which should be placed a good and a fixed light, which would effectually guard the approach to that danger, and for the purpose of ensuring safety to both limits of a safe navigation. I would also recommend that there should be a revolving light on the Great Basses which need not be elevated more than fifty-feet above the level of the sea, and as it appears to me that both lights, including the erection of the tower, which may be on the most improved principle of metallic construction, together, with the light-vessel and their respective establishments, would involve a less expense than one lofty tower of masonry, the amended project cannot be opposed on the score of expense—and will ensure all that confidence and safety so essentially required.

Captain Stuart says it was suggested that a floating light should be moored midway between the Basses; but as a light so situated would not be visible more than ten miles off, it is apparent that it would not answer the purpose, because a ship approaching either from the eastward or the westward would be on the very verge of danger, at the distance of thirteen or fourteen miles from the floating light—and it requires no argument to show the absolute necessity of so placing a lighthouse that the navigator shall entertain no doubt whatever of its perfect efficiency; in a word, confidence in making for a light is indispensable—otherwise perplexity, confusion, and peril would be the inevitable result.

The least reflection will convince every one that this subject is one of vital importance—and although it may appear to some of your readers void of interest, yet to every person who contemplates a passage to, or from old England *via* the Red Sea, or round the Cape of Good Hope, or even a trip to and from China, the Basses must and will present a source of anxiety and alarm, nor will those apprehensions subside until those almost hidden dangers shall be guarded as they ought to be, by the sure and certain indications of a safe approach and a correct departure.

I am, &c.

CHRISTOPHER BIDEN,
Master-Attendant.

Madras, January 12th, 1852.

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Madras, 14th August, 1851.

SIR.—"We the undersigned Commanders of British Merchant Ships, beg to offer you our thanks for your exertions used in advocating the erection of a Lighthouse on the Great Basses. We feel perfectly confident that such a light is greatly needed, and that the benefit all vessels navigating the Bay of Bengal would derive from it, would be great indeed. We do not intend entering into a lengthy detail of reasons on the necessity for the erection of such a Lighthouse, but, simply to give our testimony as Commanders of ships, that the existence of it would be to us a great boon, and would greatly add to the security of life and property on board all vessels that are obliged to hug the land about the south-east coast of Ceylon. And we trust, that this our testimony may be used by you in quarters where such may have weight —and, that those who have authority in this matter will exert themselves to accomplish an undertaking so necessary to the interests of the Merchant, the Commander, and all whose lives and property are risked on the great deep.

J. MARSHALL, Com. *Alice Maud.*
T. STRICKLAND, Com. *Scotia.*
J. BROWN, Com. *Nonpareil.*
S. BIRD, Com. *Melanie.*
JOHN VIRTUE, Com. *Herald.*
H. W. POWEL, Com. P. & O. C. Steamer, *Haddington.*
H. LESHAW, Com. *Lady Montagu.*
J. WILKIE, Com. *Ann Mitchell.*
W. CRISP, Com. *Cecilia.*
G. P. LAMBERT, Com. *Ellenborough.*
F. SOULE, Com. *Milton.*
J. CASTOR, Com. *Teazer.*
H. BURTON, late Com. *Teazer.*
M. THOMPSON, Com. *Rokeby.*
G. C. CAREW, Com. *Futtay Salam.*
J. W. PIXLEY, Com. ship *Essex.*
W. DARKE, Com. ship *Mary Ann.*
R. S. STUART, Com. *Sir R. Seppings.*
J. P. ANDERSON, Com. *Mermaid.*
J. H. PALMER, Com. *John Line.*
H. BLYTHE, Com. *Corsair Bride.*
J. B. CROWTHER, Acting Com. H. C. steamer *Hugh Lindsey.*
T. A. COX, Com. ship *Coldstream.*
T. SCOTT, Com. *Talavera.*
E. HIGHT, Com. *Madagascar.*
J. RUDGE, Com. *Tartar.*
A. GRIFFIN, Com. *S. S. P.*
R. ROE, Com. *True Briton.*
A. NEWMAN, Com. H. C. steamer, *Hugh Lindsay.*
W. T. B. EVANS, Com. *Futta Molaruck*
W. THOMAS, Com. barque *Honor.*
W. B. PRYCE, Com. *Windsor.*
E. P. NISBET, Com. *Nile.*
A. PARISH, Com. *Wellesley.*
D. WATERSON, Com. *Conservative.*
A. TAYLOR, Com. *Mangalore.*
R. H. D. TOWLE, Com. *Atalanta.*
J. B. SERGENT, Com. *Defiance.*
L. W. VAILE, Com. *Barham.*
J. C. YOUNGHUSBAND, Com. *Patriot.*
R. W. MAPPEN, Com. *Jovan Coriana*
H. P. LOEELL, Com. P. & O. C. steamer, *Haddington*
R. P. JONES, Com. *Ancient Briton.*
H. HARRIS, Capt. H.C.S. Com. P. & O. C. steamer, *Hindostan.*
W. W. MURCH, Com. *Paragon.*
R. JEARY, Com. *Mountain Maid.*
W. WILSON, Com. *Amathea.*
G. E. BIRD, *Plantaganet.*
J. ERRINGTON, late Com. *Lascar.*
J. RAPSON, Com. *Union.*
J. B. WHITE, Com. *Laurick.*
H. C. CAYER, Com. *Diadem.*
D. MAINLAND, Com. *Sultana.*
W. WARWICK, Com. *Eliza.*
A. EYRE, Com. *Kestrel.*
J. DODDS, Com. *Thetis.*
H. TOYNBEE, Com. *Gloriana.*
B. J. MARTIN, Com. *Herminie.*
W. SCOTT, Com. *Labuan.*
E. VOSS, Com. *Vernon.*
G. N. LIVESAY, Com. *Nile,*
M. PALVADAU, Com. *Melve.*
C. C. CONSITT, Com. *Devonshire.*
D. ROBERTSON, Com. *Trafalgar.*'

To Captain Biden, Master Attendant, Madras.

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LIGHTHOUSES.

A correspondent practically well acquainted with the subject, writes: —your phantom ship cruises in many seas, but in the Red Sea she has not yet been. Had she been there, her navigators must have noticed want of lights, a want prevailing in those parts. Lighting the Red Sea, the Great Basses of Ceylon, and several stations in the Straits of Malacca and Singapore, are the points to which I would draw your serious attention. It may be calculated that 10,000 British subjects, including the passengers and crews of the steamers, pass up and down the Red Sea annually embarked in ships of great tonnage and value. The loss of one of these argosies would be seriously felt, for it would involve the destruction, not only of a valuable ship and cargo, but of a very large number of passengers. Sometimes 180 travel in one vessel; the average is about ninety in the Peninsular and Oriental Company's ships, and fifty in ships that belong to the East India Company. The correspondence of the month is placed in jeopardy. What will be the consternation in England when any steamer, going twelve knots, shall strike on one of these unlighted shoals? How rapidly a vessel in such circumstances would go down, the fate of the *Orion* and of other ships has taught us. The Peninsular and Oriental Company have offered to assist in this matter. Existing contracts will shortly expire; the speed of the steamers must be brought to an equality with that of the Cunard line, and the time has arrived when it becomes imperative on men acquainted with the facts, to urge upon the public the necessity of building lighthouses in many parts where they are now seriously wanted, as well as of adopting floating lights wherever floating lights are requisite. Small shipwrecks excite no attention; must we wait until the newspapers are fed with a tremendous catastrophe, before we do our duty to the men who navigate those distant seas?

Hastings, at Sea, lat. 12° 1′ *N., long.* 82° 7′ *E.,*
20th August, 1851.

SIR.—Having laid your letter with its enclosures before the Rear Admiral, Commander-in-chief, I have the honour to inform you in reply, that, His Excellency highly approving of your suggestion, that a lighthouse should be erected on the Great Basses, and considering that the rapidly increasing traffic in the Indian Seas, renders it now more necessary than ever, has this day addressed a letter strongly recommending its erection, to the Lords Commissioners of the Admiralty.

I am, &c.,
GEO. P. MARTIN, *Secretary.*

To Captain Biden, Master Attendant, Madras.

N.B.—I have frequently made both the Great and the Little Basses, occasionally during a fresh breeze and a considerable swell, passing them at the distance from one to three miles, and have never seen the former ledge of rocks covered by the surf or breakers, but the latter reef is nearly awash. I am of opinion that at high water springs, the Great Basses is at least eight feet above the level of the sea. The rise and fall of the sea off the Basses, is, I think, on an average, two feet six inches.

C. BIDEN.

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To His Excellency Rear-Admiral C. J. Austin, C.B. Commander-in-Chief of Her Majesty's ships and vessels in the Indian Sea.

SIR.—I have the honor to acquaint you that since the 4th of November, 1847, I have repeatedly urged (through the medium of the public press) the necessity of erecting a lighthouse on the Basses and although my suggestion has been strenuously advocated by Joseph Hume, Esq., M.P., the chairman of the Lighthouse Committee of the House of Commons, and was approved by the late Rear-Admiral Inglefield, C.B., and by other naval officers with whom I have been in communication on the subject, yet I regret to assure your Excellency that no measures have been adopted for the purpose of carrying into effect an object of such great importance, and one so essentially wanting to give security to navigation and commerce.

In Horsburgh's celebrated Sailing Directory are recorded, several disasterous occurrences and many instances of a narrow escape, and the following well authenticated facts clearly prove that the most experienced navigator may be baffled in every calculation, and only escape the extreme peril of shipwreck by a most vigilant look-out, and a careful attention to soundings.

In October, 1826.—The ship *Circassian* from Madras to England, was driven by a strong and unexpected current within the Little Basses, and saw breakers close at hand on her lee bow about midnight: a commanding breeze and smooth sea saved the ship, but if she had missed stays her fate would have been inevitable.

Extract from the Bombay Gazette, 1827.

"Another ship has narrowly escaped destruction on that Scylla and Charybdis dangers of the Indian Sea, the Basses Rocks on the south-east coast of Ceylon. We are unacquainted with the particulars of the accident, but understand that a ship of the port, the *Charles Forbes*, Bryden, Commander, struck in the vicinity of the Little Basse. Her rudder and false keel are said to be torn from her before she could be got off those dangerous and deceitful rocks. Having come from the eastward it is by no means improbable that she struck on a ledge of sunken rocks about two miles to the south-east of the Little Basses."

In December, 1844.—The P. and O. S. N. Company's steam ship *Hindostan*, Captain Moresby, from Point de Galle, had a narrow escape: she left Galle about sunset, and shaped a course to carry her well clear of the Basses, and at 5 A.M. Captain Morseby edged away to E.N.E. and left the deck, but most fortunately the chief officer went forward at daylight to look well round, and to his great surprise saw breakers about a mile off and nearly right ahead. He sheered off and reported the discovery to Captain Moresby. They then worked the reckoning and found that an extraordinary current of nearly four knots an hour, had driven this valuable steamer into so perilous a position.

In 1847.—The P. and O. S. N. Company's steam ship *Pekin*, Capt. Harris, from Penang to Suez, approached the Basses about 9 P.M., and well aware of the uncertain set and force of the current, such a course

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was shaped as according to the commander's judgment, and a due attention to soundings gave these shoals a wide berth, and he left the deck in perfect confidence. Soon after midnight, although Captain Harries had taken a correct departure from the land at sunset, and had ascertained the latitude by a star about 10 P.M., yet he entertained some doubts and thought an unusually strong current might have driven the *Pekin* a considerable distance from her assigned position. Under this impression he returned on deck—stopped the engines—and tried soundings. The first cast gave no soundings at 70 fathoms, but he saw that the lead was over-hove, and the next cast gave, to his utter amazement 19 fathoms rocky bottom, he then stood out due south, until soundings gave no ground at 100 fathoms. Captain Harris, related this remarkable case to me soon after it occurred and repeated it to Commodore Lambert at my office, on the 13th instant, when he declared his belief that a most extraordinary current must have driven the *Pekin* within the Basses.

In May, 1846.—The ship *Sultana* when running through the inner passage grazed over the sunken rocks on which the *Earl of Moira* struck and was disabled in January, 1821, but the *Sultana* escaped without injury.

H. C. steam ships *Mozuffer* and *Hugh Lindsay* in 1846 and 1847, were most unexpectedly in sight of the Basses, and in August, 1849, the ships *Julia* and *Penelope* when bound to Madras, but not sailing in company, came very suddenly close upon the Basses during the day, when the haze obsured every landmark. The commanders of these vessels forwarded me a detailed account of their narrow escape from shipwreck, and declared that a lighthouse as a beacon by day, would have saved them from the very dangerous position they were driven to.

In addition to all these positive proofs of the necessity of fixing a light on the Basses, I have the satisfaction of forwarding your Excellency a copy of a letter to my address from the respective commanders of the ships now in the roadstead, and I may here observe, that all the commanders of the P. and O. S. N. Company's steam vessels, and every master in the merchant service, whose opinion I have had the means of ascertaining on the subject, bear the same testimony and unanimously recommend the great object I have in view.

In conclusion, I beg most respectfully to offer the following remarks. The Great and Little Basses lie in the track of all ships and vessels to and from the Red Sea, all vessels to and from the Malabar Coast, and those vessels which are bound to Calcutta and Madras; to the Straits and China during the south-west monsoon, and in like manner all ships and vessels from the Bay of Bengal, the Straits, and China, when bound to the Malabar Coast, throughout the north-east monsoon pass as near to the Basses as is considered prudent; whilst all ships from Europe in the south-west monsoon when bound to the Coromandel Coast, haul up close round the south-east extreme of Ceylon, and must approach those almost hidden dangers, otherwise they would be thrown to leeward of their port; and when it is known that currents so varying in their set and velocity, and soundings only to be gained at a very short distance from danger, together with a remarkable haze which occasionally obscures

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every landmark, it is obvious that such conflicting obstacles, call forth the utmost vigilance by day, whilst an approach to the Basses by night, is fraught with such peril, that the most skilful and cautious navigator may be thrown so completely out of the reckoning, that nought but a thoroughly good look-out, and that due regard to true soundings, which should never be neglected, would save him from the most imminent danger. And I may here observe that, independent of the great risk which is incurred by both sailing ships and steam vessels, there is a very considerable loss of time sustained on every voyage in consequence of that very circuitous route which is taken to avoid so serious a danger. This impediment has caused much delay, and has frequently been complained of by commanders of the mail packets, and masters of merchant ships.

Under all these circumstances, I am confident that your Excellency will give this subject a favourable consideration, and I venture to indulge an earnest hope, that through your powerful influence, Her Majesty's Government, and the Right Honourable the Lords Commissioners of the Admiralty, will speedily authorize the erection of a lighted beacon on the Great Basses, and thereby give that safeguard to life and property, so emergently required on a track where Her Majesty's ships, together with steam vessels charged with mails, and a vast and increasing number of valuable merchant ships are so continually traversing.

I have the honor, &c.

(Signed) CHRISTOPHER BIDEN.

Madras, 19th August, 1851. *Master-Attendant.*

SABLE ISLAND, IN THE ATLANTIC OCEAN.

The following general remarks by Captain Darby, before alluded to, may be of service to seamen in addition to the observations of Captain Bayfield.

Soundings decline regularly only on the south side, but approaching the isle from any other bearing whatever, there is comparative deep water, (10 fathoms and more) close to danger. In foggy weather, vessels should not approach the north side or point of either bar nearer than 25 fathoms.

Two belts encircle the isle, the outer a mile from the shore 2½ fathoms. These belts are increased by gales, and high winds raking the island drift the sand from them to the bars. The isle is composed of loose light sand, and high gales frequently alter its outline and appearance.

The present description applies to 1823. The bearings are by compass.

When a vessel is on shore in a fog it becomes of the utmost impor-

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tance to ascertain her true position in order to save the ship or the crew. Therefore

Lower a boat when prudent & observe the following.	If breakers extend	N.W.	and	S.E.	you are on N.W. Bar.
		W.S.W.	and	E.N.E.	„ N.E. Bar.
		ahead N. and then lie		E. & W.	„ South side.
		South	„	E. & W.	„ North side.

The prevailing winds are from east to south, and from south to west, when the north or leeward side is comparatively smooth, and therefore should be sought. There is a swash-way in each bar to save lives, get to leeward by crossing either bar (*according to the wind*) at these places. No risk in moderate weather but if the surf should appear too dangerous, land as you can or try to weather the bar altogether. Having once gained north of the bar, haul up S.E. or W.S.W. (as the case may be), for the land; and take the boat ashore, as near the house as may be convenient. The semicircular form of the north side is favourable for boats, as under a windward curve a lee is afforded from east and west winds; but with fresh north winds this form is against a boat getting off the land. Therefore if ashore on the north side, push the boat right before the sea for the land rather than risk getting to leeward by crossing either bar.

If ashore on the south edge of either bar, wind north, land on south side.

If ashore on the north-east bar in tolerable weather, wind about west, you may land at the east end without crossing the bar, and (*vice versâ*) if on the north-west bar, and owing to the inner belt, high water is best landing.

After landing, if owing to fog, you cannot judge your situation so as to shape your course to one of the houses, seek the lake and then proceed.

Strong gales cause annual shiftings of the sand on both bars, which in the course of years must alter their form and extent. I have given the form of the bars as found in 1823. Mariners approaching the isle are warned to keep the lead going, and never to go nearer on the south side than 10 fathoms, or the north side than 25 fathoms.

North-west Bar extends sixteen miles and is two miles wide, the land bears south-east from its point.

The tide on this bar sets north, slacks at half flood, and turns south before high water, its rate two knots. The bank to the west and this bar are travelling to north-east.

Soundings are particularly irregular to the N.W. and N.N.W. with very variable currents.

The whole of this bar breaks in bad weather.

North-east Bar extends twenty-eight miles and is two miles wide, the land bearing W.S.W.

The flood tide sets N.N.E., five knots, the ebb three knots or less, and is scarcely felt with a spell of south and south-west winds. In gales of wind the whole bar will be one line of breakers, but in more mode-

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rate weather they do not extend beyond eighteen miles, and a vessel may cross at twenty-four miles in 7 fathoms.

The bar is travelling north.

South Side.—The current on this side in shoal water, with prevailing south and south-west winds, sets rapidly eastward until it reaches the end of the north-east bar; it then joins the St Lawrence stream, which passes the bar in a S.S.W. direction, and runs strongest in April, May, and June. I have sufficient reason to believe that the Gulf stream in 42° 30′ N., running E.N.E., occasions the St. Lawrence stream running S.S.W., to glide to westward. The strength of this stream has never been noticed, and three-fourths of the vessels lost have imagined themselves to the eastward of the island, when in fact they were in the longitude of it.

Since 1824 to the present year (1829), the land west of Volcano has been washed away.

Establishment.—This very humane establishment was founded in 1803, by the Provincial Legislature, at the recommendation of His Excellency the late Sir John Wentworth, Bart., then Lieutenant Governor, and has since proved the means of saving many lives. Every year vessels are lost. The year 1822 and '23 were particularly marked, as from L'Africaine, Hope, and Marshal Wellington, 429 persons were saved, who after escaping the dangers of the surf, would otherwise have perished with hunger. A superintendant and four men live on the island, supplied with good boats and provisions. The isle is visited twice a year by a vessel from Halifax.

Three Houses.

	One occupied by Superintendant on north side, nine miles from west end.
Another Uninhabited.	Also on north side four miles from west extremity and two and a half from west end of the lake. E.S.E. five miles, leads to Superintendant.
Another Uninhabited.	On south side nine miles from east end and close to east extremity of the lake. W.N.W. nine miles leads to Superintendant.

These houses are not in sight from the beach, but 300 or 400 yards from it, and the same also from the margin of the lake.

Those uninhabited contain the provisions, tinder box, matches, &c.

There are fresh water ponds as will be seen by a chart, but wherever the surface is moist, fresh water may be obtained by digging from one to three feet.

Additions.

A house at the east end lake on north side.

A house in the middle of the island, four miles from East Point.

The following vessels were lost on the island at the dates specified:

Brig Orion, lost in 1811; schooner lost belonging to T. and L. Piers, about 1814; two American schooners lost about 1809 and 1810; ship Union, and ship Packet, lost about 1802; brig Hard Times, lost 1811; H. B. Majesty's frigate, L'Africaine, lost 1822; brig Harriot, lost here, passenger the brave Lieutenant Torrence saved, and part of crew, also ships Hannah and Eliza,

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1803; two schooners lost in 1807, and 1820; ship Princess Amelia, lost with Duke of Kent's furniture; a fishing schooner from France, lost 1816; brig John and Mary, lost here about 1807; brig Spring, lost about 1808; schooner lost about 1806; ship Agamemnon, 1827; ship Echo, 1827; schooner Brothers, 1827; ship Melrose, 1828; ship Franklin, 1828; ship Stark Odder, five men saved out of seventy, 1804; brig lost here about 1810; brig Hope, 154 saved out of 160, 1823; ship Asia, beat over here in 1819; brig lost here in 1820; brig Marshal Wellington, lost 1823; H. B. Majesty's packet Frolic, beat over in 1823; wreck of ship Demoscota, washed ashore here about 1815; H. B. Majesty's frigate Barbados; a sloop and schooner under convoy 1812; two schooners lost about 1800 and 1806; brig Adamant, lost 1815; schooner Trafalgar, lost 1816; two American fisherman lost about 1813, and 1814; brig James, 1824; brig Nassau, 1825; Traveller, 1825; ship Elizabeth, 1826; schooner Brothers, 1826.

LOST WHALING SHIPS.—*Extract of a letter from Mr. George Harrison, of thirty years experience in the command of Whalers.*

The memorandum I have of the ships wrecked in Davis's Straits is enclosed. You will see I have made a rough calculation of the estimated loss of money, from 1819 to 1843. Taking each at the value of £5,000, I make the immense sum of £510,000, and an average of three ships each year, at an annual expense of £17,783. Independent of the value of the ships, there would also be £30,000 worth of oil, and £5,000 worth of whalebone lost amongst those ships, assuming each ship to average ten tons of oil at £30 per ton, and ten hundred of whalebone each.* I simply name this as many of the ships had from twenty to fifty tons of oil when lost. Mr. Warham's ship had about eighty tons when lost.

With regard to the currents in the Arctic seas, I have found the under current to set from S.W. to W.S.W.; the surface current is influenced by the wind. I have tried the current many times, and found it setting from one and a half to two miles per hour.

The *Thornton*, of Hull, was wrecked in lat. 79° 40′ N., and long. 6° E., in Greenland, in the early part of May, and in the early part of July I picked up one of her casks, in lat. 71° 40′ N., and long. 17° W.; I think that was in the year 1817. In the year 1814, the *Royalist*, of Hull, was lost with all hands, it was supposed in lat. 61° 30′ N., and long. 59° W., and one of her casks was found in Hoy Sound three years after. The *William Torr*, of Hull, was lost in lat. 75° N., and long. 61° W., and her casks went on shore on the west side of Ireland.†

* We calculate one hundred of bone to one ton of oil.

† The reader of the *Nautical* will remember, that the positions of four casks of the *William Torr* are marked in our bottle chart as shewing by their drift from Davis Strait where she was lost, the general drift of the current. The chart in is our vol. for 1842, and a new edition of it will shortly appear with numerous additional bottle tracks.

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1st February, 1852.

I have sought all my papers over and cannot find the letters I received from the two captains I assisted in distress, but one ship was the *Comet*, of Hull, the captain's name was Wright, I think, the other was the *Chieftain of Kirkcaldy*, Captain Todd.

A list of the ships lost since the first discovery of a passage through Melville Bay.

† Lost on the outward passage. ‡ Lost on the homeward.
* Lost in Greenland, the others in Davis Street.

SHIPS.	TONNAGE.	SHIPS.	TONNAGE.
1819-12.		1824-1.	
Equestris	396	Aimwell*	262
Ocean	346	1825-4.	
Prescot,† at Shetland	328	Lively	238
Samuels	398	Success	105
Majestic	385	Estridge	312
Raith	295	Don	333
Royal Bounty	282	1826-5.	
Thomas and Ann	338	Cicero	325
Sisters	303	Esk,‡ at the Tees...	354
Mary Anne	304	Lively*	251
Tay	364	Dexterity	321
Diamond*	371	Jean*	235
1820-3.		1827-1.	
Brothers	377	Mercury	346
Highflier*	163	1828-4.	
Hope*	274	Alpheus	
1821-13.		Active,† on Iceland	341
Aurora	368	Elizabeth	320
Cervantes	355	Enterprise	321
Harmony	378	1829-4.	
Hebe,† at Aberdeen	364	Dauntless...	261
Henry	314	Rockwood...	361
John	343	Jane	280
Leviathan...	409	Home Castle	310
Symmetry	343	1830-20.	
Thornton*	262	Gilder	360
James,† at Aberdeen	151	Laurel	321
Dexterity	397	North Briton	262
Larkin	416	Oxenhope...	286
Elizabeth	310	Progress	307
1822-8.		William	350
King George*	303	William and Ann...	362
Calypso	304	Baffin	320
Hero	306	Rattler	349
Invincible...	306	Achilles	367
Valiant	336	Three Brothers	339
British Queen	362	Spencer	340
Eliza	311	Alexander	258
Lady Forbes	337	Letitia	318
1823-3.		Middleton...	329
Cyrus*	346	Princess of Wales	308
Fame, burned at Orkney's, outwards	377	Hope	251
		Resolution	400
Neptune*	356	John	340

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SHIPS.	TONNAGE.
Ville de Dieppe, a French ship upwards of	400
1831-3.	
James	346
Neptune	281
Rambler	282
1832-5.	
Egginton	336
Ariel	340
William Young	290
Shannon,† upon an iceberg ...	348
Juno, burnt in Lancaster Sound	356
1833-1.	
Ingra (Sound)	316
1834-3.	
London	345
Lord Wellington	361
Harriet	250
1835–6.	
Isabella	374
Lee	365
Mary Francis	394
Derdon	285
Middleton...	284
William Torr	281
1836-2.	
Margaret	340
Thomas	365
1837-0.	
1838-0.	
1839-0.	
1840-1.	
Hecla	420
1841-0.	
1842-0.	
1843-1.	
Ranger, upon an iceberg off Cape Durban...	180
1844-0.	
1845-0.	
1846-0.	
1847-3.	
Bon Accord	340
Alfred	280
Caledonia	335

Captain Harrison considers that the tides in the upper part of Baffin Bay do run strong with southerly gales, but not when the gale is not from that quarter. He has measured the rise of tide at Arabella Rock, Crimson Cliff, where springs rise eight feet, neaps six feet. He does not believe that any one has been near Smith Sound, since Old Baffin, on account of the barrier where the ice is full fifty or sixty feet thick, and stands about twelve feet above the level of the sea. The bottom of it could readily be seen and he does not believe there is shoal water there. From the distance at which it can only be approached you cannot see into Smith Sound. The south-east side is very high land, and the north or north-west is lower in appearance, and he has been up to the edge of the barrier six or seven times. With a northerly wind there is an opening between the *drift* ice and the upper end of Baffin Bay. The ice forms about six feet thick in a year, and whenever the great thick ice comes away down Baffin Bay, the whalers are in the habit of saying, this is the barrier ice coming, but this happens once or so in ten years. Captain Harrison is quite satisfied that Sir John Franklin must be in or about Wellington Straits. In crossing from lat. 62° to 67° N. after passing Cape Farewell is a bank abounding with cod, halibut, turbot: all of which may be taken in any quantity; at night they rise to the surface about twenty-five miles from the land off Muskito Cove.

The best fishing ground for cod is about lat. 64°, and about twenty-five miles from the Greenland Coast, in the track the ships take. Captain Harrison has pulled out with a single line in one night a hundred cod, and above 1,500 have been taken by three boats in six hours, besides turbot. Beef is best preserved in a rush mat, hung up to one of the tops, and will keep thus all through the summer. Off Sanderson's

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Hope, Greenland Coast—high land in 73°, plenty of eggs are to be found, eider duck and gullanuti eggs.

"In Buchan Island," north-east corner of Melville Bay—Captain Harrison found the potato pits of eggs placed there by the Esquimaux. Whalers sometimes visiting Whale Sound suppose they have been to Smith Sound on account of the barrier ice.

Two of Harrison's best men are with Franklin, one of the name of Berry—used to let him have the rifle, and was sure to see him return loaded with game; he could bear any fatigue in excursions over the ice. At the great exhibition you must have seen Hancock's specimens of falcons, the gorged falcon—falcon and heron. Those Greenland falcons were all shot by Captain Harrison. You can never get a shot at them from the deck. Captain Harrison shot many by taking his gun aloft to the cross-trees. Tell any youngsters you know of this who are going out. "In Lancaster Sound the wind blows constantly either in or out of the Sound, and when blowing in or from the eastward it is always thick weather. Captain Harrison *holds out no encouragement in the direction of Smith Sound.* I questioned him closely as to the soundings—whether there was shoal water there. He had often been close to the barrier, but had never sounded alongside of it, except as a matter of curiosity to measure the thickness of the ice: the water was clear as crystal—they could distinctly see the line of the bottom of the ice, and there was deep water below. He treats the report of shoal water seen off Smith's Sound, as being chimerical.

The *William Torr*, of Hull, was lost and all hands off Cape Fry, in December, 1835. She was one of our number that had wintered; the natives described the vessel to him in the year 1840, when he was in Northumberland Strait, lat. 65° 0′ N., long. 61° 30′ W.

With the view of adding all the testimony we could obtain on so important a subject as the disappearance of the Arctic Ships, we put the following questions to Mr. Harrison, and have added his answers. Did any of the ships lost in the ice (of which an account is given by you) lose all their crews? and generally *how many of the crew of each vessel were saved?* I do not think there could be more then ten men lost amongst the whole of the ships wrecked.

Do you think it possible, (not to say probable,) that two ships could be lost in the ice, and every one with them, without something being known about them—or, something of the ships being found in some part of the Bay? I do not believe that two ships could be lost, and all the crews perish, without some traces being left of the crews and ships in the situation as described of Sir John Franklin's ships, when the men could *walk* to the *land.*

Why where no ships lost in 1837, 1838, and 1839; and 1841, and 1842; and in 1844, 1845, and 1846? Was it because no ships went up the Bay in those years? In the years 1837, 1839, 1841, 1842, there was no passage through Melville Bay. In 1838, 1844, 1845, it was an open season and free from sudden gales of wind, which I consider the cause of no losses.

What do you think of Adam Beck's story about the crews of the

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two ships having been murdered by the Esquimaux. Do you believe it to have happened?

I do not believe a word about the crews being murdered! Men with no arms but bows and arrows, could not have a chance with men having firearms; besides, these are not so numerous. I have been amongst the Arctic Highlanders, and the natives in the extreme south of Davis Strait, on the west side, and never met with anything like hostility amongst the Esquimaux: those of them that have not had any intercourse with the English ships have heard of them, and will come on board after a little acquaintance. I got beset with the ice off Cape Dudley Diggs, and I went single handed amongst the natives then, and I did not think there was any fear from them. I did the same thing in Northumberland Strait, and both those times the men I met with had not seen any Europeans before,—so much so, that they requested me by signs to open my clothes at my breast, to see if my skin was the same colour as my hands and face. I name this to show how harmless they were.

In 1835, the *William Torr* was wrecked as described in my last, and no account was heard of her until 1840—that Mr. Penny and I went into Northumberland Inlet, when the natives there told us that a ship such as ours was, was lost four years before; they told us the ship was lying against the land, (or fast ice frozen to the land,) and that they sledged to the ship; a gale of wind came from south-east caused the heavy drift ice to crush the ship's sides in, and the masts fell upon the ice: they were so particular, that they said, two masts fell towards the land, and one mast fell the other way: twenty-two men of the crew were so frost bitten, that the natives made seven snow huts and put the men in, but the men all died. There was at that time one more ship in sight to the eastward, and the remainder of the crew put a bundle of clothes upon their backs and walked away towards the other ship; they told us they could not tell if they got to the ship; the master of the *William Torr*, was a short red faced man, and they described him as such. From this account Mr. Penny and I took it for granted it was the *William Torr*, and supposed the other ship to be the *Jane*, of Hull, —as the *Jane* of Hull, *Viewforth* of Kirkaldy, and *Middleton*, of Aberdeen: these ships were frozen up a little to the south of the *William Torr*. She was all broke to pieces, and the ice run over her; the natives gave the wrecked men some seals' beef to eat, but the men could not eat it: the mast lay upon the ice as described. I may as well state here, that no other ship was lost that year that had wintered, therefore, I conclude it must be the *William Torr*. She was last seen on the south side of Home Bay, lat. 68° 40′; the *Harmony*, of Hull, left here on the 28th September, and joined us on the 3rd of October, in lat. 69° 6′.

I beg to say, the whole of this conversation was carried on by the Esquimaux Mr. Penny had on board, who had been at Aberdeen all the winter. I was in company with Mr. Penny in 1839, in September, when I agreed to go with Mr. Penny to this new fishery, said to be in this place which I name Northumberland Strait, on condition Mr. Penny would take this native home with him to England, which he did.

I saw the *Thomas*, of Dundee, wrecked on the 13th December, 1836,

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in lat. 73° 40′ N., the weather very severe and only two men were lost and they had too much to drink and perished upon the ice—or they would not have lost their lives. The crew of the *William Torr*, is not of course considered to be named in my statement, when I say I do not believe there were ten men lost amongst the ships wrecked, although the *William Torr* is one of the ships named. I suffered much myself in the winters of 1835 and 1836, when I was shut up in the ice, and also many privations I suffered in my long servitude of thirty-three summers and two winters in the Arctic Region. I feel exceedingly for Sir John Franklin's situation, and no one takes more interest than I have done, in enquiring and looking at every account of the expedition, and I sincerely hope this will prove successful.

My opinion is, that, when Sir John's ships were broken from their winter quarters, it would be at a season of the year when the crews could easily travel over ice to the land. Besides, had the ships drifted out of Sir James Lancaster Sound, and along the coast, some of the natives would have seen them. The southerly gales are the worst for breaking up ice, and I think it more likely that the expedition would be drifted up Wellington Channel. Captain Parry speaks of the channel being open and free from ice, both on his outward and his homeward expedition to Melville Island.

Captain Warham recollected the loss of the *King George* in the month of April, upon a reef of icebergs which he, in the *Lady Jane* escaped from, by weathering them on the previous evening. This is the severest weather and gale he remembers, and says "the *Lady Jane* was a body of ice from the trucks to the gunnel." He saw the *King Georye* at that time, and never heard of any of the wreck being seen—all hands were lost. There was another ship lost in the same gale with all hands. Captain Warham does not, however, speak with confidence as to no traces of them having been met with. He gave me, however, another instance of a wreck which shows how long traces of it remained, viz: a Dutch vessel was wrecked in the ice, in (1824), and that the crew got on board the *Dundee* of London, and that the *Dundee* and the wreck drifted from 74° N. lat. to 63° 2′ E., and the crews burnt great portion of the wreck for firewood, and thus got through the winter.

In 1837, ships could not get into Melville Bay on account of the ice, and there was no fishing in that year.

In 1838, the passage was open and ships got through it without difficulty. No wrecks in that year, it was "an open season."

In 1839, the passage into Melville Bay was again closed.

In 1840 and 1841, the same barriers of ice existed and no passage through it, and this was Captain Warham's last voyage.

Captain Warham does not think it at all likely that the two (Discovery) ships could have been wrecked without any traces of them being left, and he feels quite satisfied that they have gone *up the Wellington Channel.* He places not the slightest faith in Adam Beck's story.

To the above you will please to add Captain Harrison's observation of his having often been hurried away by the sudden breaking up of the ice. Why may not the ships of the expedition have been irresistably

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borne away by the gale and ice for as great distance as the *Dundee* and the wreck, and perhaps further, or far above 11°?

I hope that the expedition will be well supplied with *rifles*. Don't fail to press this upon Sir E. Belcher's attention. Harrison says, "that he often got well supplied with fresh provisions in consequence of having a good one on board."

It would be ridiculous to put merely common muskets into such ships —they should be light rifles of the best manufacture.

Arctic Matters.

We now complete the series of letters from Capt. Fitz James commenced in our last.

Her Majesty's ship Erebus, at sea,
June 26th, 1845.

A delightful day we have had, quite calm, hot sun; thermometer 42°. All sorts of beasts being caught in nets. We take turn to fish with a net at the end of a long pole, and bring up most strange animals. Crozier dined on board, and Hodgson came, looking very ill. We saw several icebergs a long way off, which we hoped would come near us; the scenery and rugged peaks of Greenland twenty miles off.

27.—To-day has been hot and calm and delightful; got bottom in 40 fathoms, and pulled up starfish and shells, and strange beasts, and, what is better, pulled up plenty of large codfish—enough for a good feed or two for all hands. This afternoon a thick fog suddenly came over us, with a north wind, in which the thermometer fell to 35°, where it now stands, and we are sailing in smooth water, and small whales bounding about in all directions. Lat. 64°. The fog has cleared away, and we have lost the *Transport*. This morning a brig came close to us, and her skipper came on board—a rough old fellow, from Shetland. He has come to fish for cod on the banks, and for salmon in the "Fiords,"—a new scheme quite in these parts. He came to see the little old man who had the wife at Stromness, who had been a mate with him.

29th.—To-day we have had the sea smooth as glass, very cloudy, and a cold air; thermometer 35°; and to my delight passed several icebergs, within a mile of a large one. The effect was very fine, for the horizon happened to be a dark distinct line, and these bergs, catching an occasional gleam of sunshine, shone like a twelfth cake. I had fancied icebergs were large transparent lumps, or rocks of ice. They look like huge masses of pure snow, furrowed with caverns and dark ravines. I went on board the *Terror* in the evening, for it was quite calm, and found Hodgson better. When we came on board, we pulled up for Goodsir, beasts, star-fish, mud, and shells, from a depth of 250 fathoms, and caught more cod. Last night I remained up till a late hour trying to read a watch by the light of certain blubbers, remarkable jelly-fish, which emit a bright philosphorescent light when shaken in a basin. Land in sight, under dense masses of clouds. We have found the *Transport* and a Danish brig is close to us.

30.—The coast of Greenland is now very fine. We are nearer than ever —about twenty-five miles—but it looks close, and dense clouds overhang the

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whole rugged and snowy coast. I saw several glaciers to-day, but the clouds were too dense to sketch anything, though the effect is very fine of the mass of cloud and snow relieved by dark blue craigs. To-day, at 6 o'clock in the evening, we crossed the Arctic circle, lat. 66° 30′ and the sun's declination happening to be more than 23° 10′, he will not set to us to-night at all. I regret that it is too cloudy to see him at midnight. This evening sea smooth, no icebergs.

July 1.—To-morrow we expect to get to Disco, or rather, to the Whale-fish Islands close to it, where we shall unload the *Transport* of provisions and coals, and start as soon as we can. I shall, therefore, continue my journal up to the present time, and if you hear nothing more from me you must be satisfied that we have arrived at Disco, and are gone on in prosecution of our journey.

This morning was damp and foggy, but it cleared away, and we were now sailing with the dark blue land on our right, twenty miles off, relieved by snowy peaks, and a line of craggy icebergs, as far as the eye can reach ahead. In a few hours we shall be among them. I have just been up in the crow's nest, and the appearance of these icy craigs and pinnacles is beautiful and singular; far in, close to the land, is a perfect glacier, equal to any Swiss one. Still on we go,—on, on—the three of us, though the transport wishes herself back again, no doubt. This evening we sailed in among a shoal of some hundred walrusses, tumbling over one another, diving and splashing with their fins and tails, and looking at us with their grim, solemn-looking countenances and small heads, bewiskered and betusked. There are sixty-five icebergs in sight.

In talking to Sir John Franklin, whose memory is as good as his judgment appears to be correct, it appears that one great difficulty is to get from where we are to Lancaster Sound. Parry was fortunate enough, in his first voyage, to sail right across in nine or ten days—a thing unheard of before or since. In his next voyage he was fifty-four days in toiling to get through fields of ice, and did not get in till September, yet Lancaster Sound is the point we look to as the beginning of our work. If we are fortunate we shall be there by the 1st of August, which will be time enough; sooner would probably put us among the clearing ice. No expedition has ever been able to leave Disco before the 4th or 5th of July, though some have sailed a month before we did, except Ross in his first voyage, and he got away by the 16th of June, and was, I believe, a month going sixty miles further. So you see all is conjecture; we may do well this year, and again, we may not.

Midnight, 1st.—I have just been on deck to look at the splendid icebergs we were passing through, and saw one about 200 feet high topple over and come down with a crash, which raised a cloud of foam and spray and mist like an avalanche. It is a fine clear, sunshiny night; the Danish brig is closer in-shore, occasionally hidden from our view by the bergs; 180 were in sight at one time.

2nd.—The weather was so thick, that we could not see when we had gone far enough, but found ourselves in the forenoon right under a dense, black-looking coast topped with snow, with long furrows and ravines of snow, and canopied with a mass of clouds and mist. In bold relief, at the foot of this black mass, the most fantastically formed and perfectly white bergs shone out. This was Disco, and we showed our colours to the Danish flag, hoisted on the house or hut of the Governor of the Danish settlement, called Lievely, near its south end. We are now beating up to Whale-fish Islands, which are in the bay, formed by the south end of Disco and the main land, where we clear the transport, &c., and shall probably be in to-morrow morning early, as we are now (ten P.M.) eighteen miles from them. The scenery is grand, but desolate, beyond expression. I could not help thinking of the French-

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man, who, after a long account of the misery of the rain and fogs of England, wound up with—"*Pour quitter ce triste sol je m'embarque a Liverpool.*" Osmar has just come from on deck (midnight), and is dancing with an imaginary skipping-rope. I said to him—"What a happy fellow you are, Osmar; you are always in good humour." His answer is—"Well, Sir, if I am not happy here, I don't know where else I could be." Reid says we shall see the "Huskimays" to morrow morning.

3rd.—This morning, instead of going into Whale-fish Islands, by some mistake, Reid fancied we were wrong, and away we went up to the end of the bay, thirty miles, to the north of the Waighut Channel, looking for them —the bay full of the most glorious icebergs, packed close along the shore. At noon we found out our mistake, and had our sail for nothing, which would be good fun but for the delay. I went on board the *Terror* in the evening, and found Captain Crozier knew the mistake, but fancied we had given up the idea of going there. Fortunately, the wind favoured us right round the bay, and we had a delightful sail. We are now running into the Whale-fish Islands.

4th, evening.—You will bear in mind that all this time the sun is up. Finding ourselves at last off these rocky islands, we sent Levescomte in the gig to reconnoitre, as Captain Crozier, who had been here some years ago, did not recognise the place—a certain flag-staff on a hill having been carried away. Very soon out paddled five "Huskimays," in the smallest possible canoes, all in a row, and two going a-head kept near the ship, and piloted her into a safe place among the rocks, where we are now moored in a channel just four times the ship's length in breadth, and perfectly land-locked. I was ashore all day on Boat Island, observing, with "Fox," and got very wet and cold; but plunging into cold water, when I got on board, made me quite warm.

Sunday, 6th.—A fine sunshiny night, and we had a delightful sunshiny day, quite warm, the air clear, ice glistening in all directions. The fine bold land of Disco, black, and topped with snow—clear—the sea covered with bits of ice, which are rushing through the channel as they break from the icebergs, which fall with a noise like thunder. Every man nearly on shore, running about for a sort of holiday, getting eider ducks' eggs, &c.; curious mosses and plants being collected, as also shells. Levescomte and I on the island since six in the morning, surveying. It is very satisfactory to me that he takes to surveying, as I said he would. Sir John is much pleased with him. All yesterday I was on the island with Fairholme, with the dipping-needle. We have a little square wooden house to cover ourselves. Very large mosquitoes biting us. I shall send you one. The transport will probably be cleared to-morrow evening or Tuesday, and shall get off on Wednesday evening or Thursday; that is, the 9th or 10th—and hard work too.

A man just come over from Lievely, a Dane, who has married an Esquimaux, says that they believe it to be one of the mildest seasons and earliest summers ever known, and that the ice is clear away from this to Lancaster Sound. Keep this to yourself, for Sir John is naturally very anxious that people in England should not be too sanguine about the season. Besides, the papers would have all sorts of stories, not true. I do believe we have a good chance of getting through this year, if it is to be done at all; but I hope we shall not, as I want to have a winter for magnetic observations. And now here goes a new pen into the porcupine, to say that your journal is at an end, at least for the present. I do hope it has amused you, but I fear not; for what can there be in an old tub like this, with a parcel of sea bears, to amuse a "lady fair?" This, however, is a *façon de parler*, for I think, in reality, that you will have been amused in some parts and interested in others, but I shall not read back for fear of not liking it, and tearing it up.

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H.M. ship Erebus, Lat. 68° N.,
11 *p.m.*, 1*st July* 1845.

—— You don't often get a letter from *this* side of the Arctic circle; you have never had one from any body who has a more sincere regard for you.

We expect to get into Disco to-morrow, and I shall have so much work on my hands that I may not have time to write, so I shall have this letter written, ready before hand.

The fair wind which blew us from our friends the steamers, did not last long, and we had one continued succession of westerly and north-westerly winds, (relieved now and then by a fair wind for a day) till the 21st June, when we found ourselves 134 miles due east of Cape Farewell. Here we had a calm, with a most tremendous heavy swell, in which we *did roll.* During our voyage thus far, we passed within sixty or seventy miles of your old friend Iceland, but it was too cloudy to see Mount Hecla. We were not within seventy miles of Cape Farewell, but rounded it with a gale right aft, which followed us with a heavy sea. We kept close reefed top-sails, and reefed fore-sail, and made the old craft go eight knots through it, losing no time I can assure you. The only difficulty I had was to get *Sir John* to shorten sail, when it was wanted. He is full of life and energy, with good judgment, and a capital memory—one of the best I know. His conversation is delightful and most instructive, and of all men he is the most fitted for the command of an enterprise requiring sound sense and great perseverance. I have learnt much from him and consider myself most fortunate in being with such a man—and he is full of benevolence and kindness withal.

We had the usual allowance of rain, squalls, (and heavy ones too) shipped a few seas, one or two down in our mess, but satisfied ourselves that the *Erebus* is very easy, though now and then we did kick and plunge most terribly. We took it all in good humour; in fact there is incessant fun of some sort from morning to night. We are most comfortable and happy—plenty to do, observing all sorts of things all day, and eating good dinners into the bargain.

On Sunday the 22nd, we were due south of Farewell. On the 24th we flattered onrselves we were in Davis Strait, being in lat. 69° 36′, for a bright gleam of sunshine enabled us to get this observation, and to dry our clothes and selves too. We worked for Cape Desolation which sounds *Polar* enough, and we bounded along merrily, shaking hands with ourselves, and making imaginary short cuts through America to the Pacific, the thermometer had scarcely ever varied 3° for three weeks, being about 43°.

On the 25th, we saw our *first iceberg* in shore, the beautiful sharp craggy snowy coast of Greenland appeared, an immense distance off, and a thing like a rock sticking up like a barn ten or twelve miles off, which might have been an iceberg for aught I could tell. This was at two in the morning, the sun just rising, the sea smooth, air clear. Read, our ice-master, always told us we should see *no ice* down here "barring the bergs"—which are nothing. Since then we have had delightful smooth seas—sometimes calm, sometimes a foul wind light, and *much* fair wind.

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For the last few days we have been nearer the land, and yesterday were catching cod near the most glorious assemblage of ice, rock snow and clouds—being about thirty miles from the coasts about Lichtenfel. To-day we have had a splendid breeze right aft, with a strong current in our favour. A most splendid semi-circle of icebergs appear ahead, and under the land we count sixty-five from the "crow's nest," but we don't care for we know they are all aground. I always fancied an iceberg was a great transparent looking lump of ice, instead of a white beautiful twelfth-cake looking-thing as it is—odd shapes enough however, have some of them. I have just been on deck looking at one about 200 feet high, which came down with a crash and raised a mist like an avalanche. It is now twelve o'clock, though the sun is up, so I shall go to bed and finish this to-morrow—though it is a pity to sleep on such a fine clear sunshiny night.

2nd July.—Soon after going to bed last night it came on to rain very hard and the breeze freshened. We were in amongst the icebergs and saw about 180 before morning, when we stood in and found ourselves in the forenoon close under the rugged high land of Disco, covered with masses of cloud and its ravines covered with white snow. We were in fact close to the settlement called Lievely, and shewed our colours to a Danish flag hoisted on a low point. The day has been tolerably miserable, raining hard; thermometer up to 42°; smooth water; and we have had to beat up towards the Whale-fish Islands, which are in the bay to the south-east of Disco.

The scenery of Disco is grand in the extreme and well worth the trouble of coming to see, and the beautiful icebergs in bold relief against the dark almost black looking coast, have a very curious, and to us novel appearance. We shall not get into our berth among the Whale Islands before to-morrow.

Whale-fish Islands, 10th July, 1845.

We lost the whole of the 3rd by some extraordinary mistake. We mistook the *locale* of the Whale Island, (having two charts, one of which was wrong and the other not too right,) and we went right up the bay to the mouth of the Waigaal, sailing in the most delightfully smooth water among icebergs of the largest size. The altitude at noon shewed us we were wrong, and we went back, reaching our anchorage at three on the morning of the 4th. Fortunately we had a breeze all round the bay, and as this is the only day we have lost since we sailed, we must set it down to unavoidable accidents and *not care*. The master of the transport says, "he never saw vessels carry so much sail as we did." I shall give Mr. Griffiths (the Agent) a note to you as you desired, and I think he will amuse you with his account of us. He is a very intelligent and well read man, so get hold of him. This is the snuggest of all possible harbours. We are lashed alongside the transport, moored head and stern, and the *Terror* close outside us.

They have the smallest possible canoes here, into one of which I

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was determined to go last night, so got my trousers off and paddled about for some time, but at last over I went head downwards where I remained till rescued.

Our observatories where I have passed most of my time are on Boat Island, and we have had the most heavenly weather here I ever saw, clear and calm, with a hot sun and icebergs glistening in all directions. Fairholme, Hodgson, and I, counted 280 from the top of a hill the other night, and big musquitoes biting us all the time. The work of clearing the transport has been a heavy one. We expected to do it in two or three days at most, but though we have worked from four A.M. to six P.M. hard, we shall only finish this evening, and I hope swing the ship to-morrow, and sail next morning, the 12th, rather late but we can't help it; and if we have a good breeze and open sea to Lancaster Sound shall be there before the first of August. There will then be plenty of time, but we must remember that Parry was fifty-four days doing it on one occasion. We are very deep, and full as an egg, the *Terror* is fearfully deep and her deck is piled up with coals to the exclusion of all light below from her bulls' eyes, which is a serious annoyance: however, we shall start with three years' provisions and the *Engine!*

You have no conception how happy we all are. Sir John is delightful; I believe, however, I told you of him in a former part of this letter.

We hear that this is supposed to be a remarkably clear season, but have had as yet no good authentic intelligence. However, clear or not clear we must go ahead as the Yankees have it; and if we don't get through it will not be our fault. I can see, however, that even if there be a good passage, that it is a perfect lottery what sort of season we have, and whether we happen to be at the particular spots at the most favourable moments. I like Crozier, he is a most indefatigable man and a good observer, just suited for his position, I should say.

And now you have us as far as Disco, and by the time you get this we shall, I trust, be well into our work, *where* we may be God knows. Give my kindest regards to Sir John and Lady Barrow. We intend to drink Sir John's health on the day we go through Behring Straits. If we get through this year, we shall have to land somewhere or other to discharge some cargo, for it will not be safe to go into the Pacific laden as we are. And now good bye for the present; if there be an opportunity of writing by any of the whalers, I shall give you a line; in the meantime, believe me always,

Your sincere friend, JAMES FITZ JAMES.

All your friends here (and you have many) desire to be remembered to you.

11th July.—The transport is only this day cleared at noon, the work has been very heavy, and we are fearfully deep, drawing 17 feet 4 inches forward and *no false keel*, but we have three years provisions in. Don't you Admiralty people be saying—"What have those fellows been wasting their time at Disco for? We have done all that was possible to do in the time, besides, the wind is north-east and we are better here. The weather heavenly, sun quite hot.—Adieu.

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Whale-fish Islands, 11th July, 1845.

Dear Coningham.—E——'s bundle of yarns will show you that I am well and happy, and have not forgotten you yet. I have not much time, as the transport sails to-morrow evening, and we shall be all day at work. It was a heavy job clearing the transport, and took us longer than we imagined it would have done, though we worked from four till six. We are now full—very—having three years' provisions and coals, besides the engine. The deck is covered with coals and casks, leaving a small passage fore and aft, and we are very deep in the water. We sail, if possible, to-morrow night, and hope to get to Lancaster Sound by the 1st of August, which, however, is a lottery. It is now eleven o'clock, and the sun shines brightly above the snowy peaks of Disco. From the top of one of the islands, the other day, I counted 280 icebergs; and beautiful objects they are. Should you hear nothing till next June, send a letter, *via* Petersburg, to Petro Paulowski, in Kamskatka, where Osmar was in the *Blossom*, and had letters from England in three months. And now God bless you, and everything belonging to you.

I am, &c.,

JAMES FITZJAMES.

To William Coningham, Esq.

THE ARCTIC SEARCHING EXPEDITION.

The Arctic ships under the command of Captain Sir Edward Belcher, will have left our shores on their interesting voyage before the appearance of our next number.

We annex here the names of the officers employed in them, and as a matter of curiosity, the views of the leaders of the last expedition on the object and locality of the search as on record in the Arctic Report.

Captain Austin.

"Any search up the Wellington Strait would in my opinion be fruitless. I cannot resist the conviction that the missing expedition did not advance in the second season beyond Beechey Island." Page 165, in which opinion Captain Ommanney concurs.

Captain Penny.

Admiral Fanshaw: "I think your opinion was that Sir John Franklin went through that channel to the worth-west?"

Captain Penny: "I am convinced of that, I always had that impression, and I have never had occasion to alter it. I do not think he could have gone any other way." Page 9.

ASSISTANCE.—*Captain* Sir E. Belcher; *Commander* G. H. Richards; *Lieutenants* W. W. May, J. P. Cheyne; *Master* J. F. Loney; *Mate* James B. Grove; *Surgeon* David Lyall; *Clerk in Charge* James Lewis; *Boatswain* W. Taylor; *Carpenter* W. Kerr.

PIONEER, tender to Assistance.—*Lieutenant* Sherard Osborn; *Master* J. H. Allard; *Assistant Surgeon* John B. Ricards.

INTREPID, tender to Resolute.—*Master* F. J. Krabbe; *Assistant Surgeon* R. C. Scott.

RESOLUTE.—*Captain* Henry Kellett; *Commander* L. McClinlock; *Lieutenants* G. F. Mecham, B. C. T. Pim, R. V. Hamilton; *Master* George F. Mc Dougall; *Mates* R. Roche, G. S. Nares; *Surgeon* William T. Domville; *Clerk in Charge* William H. Richards; *Boatswain* Thomas Chandler; *Carpenter* William Deane.

NORTH STAR.—*Commander* W. J. S. Pullen; *2nd Master* W Shellabear; *Surgeon* Dr. R. Mc Cormick; *Clerk in Charge* William Elliott.

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The Loss of H.M.S. Reynard.

"Post tot naufragia portem."

The dangerous navigation of the China Sea, is notorious to seamen, and universally acknowledged. Studded as it is with coral reefs, some of which are as steep as a wall, the lead affords no indication of their proximity, until it is too late to take measures for the safety of a ship unfortunately entangled among them; occasionally also, especially about the change of the monsoon, its dangers are increased by fog, equal in density to those of the Banks of Newfoundland. Thus it becomes of the utmost importance, that the direction and strength of its currents should be defined, for it is evident that the seaman can only hope to obtain an approximation to his position (in the absence of observations and soundings) by a correct knowledge of them.

To the want of this most important information, the loss of H. M screw sloop *Reynard* upon that dangerous reef, the Pratas, on the 31st of May last, may be attributed.

We have therefore been most anxious to gather information from every reliable source relative to this unfortunate catastrophe, besides what has appeared in evidence at the trial of the officers and crew at Penang, for the guidance of ships hereafter navigating that treacherous part of the China Sea.

The result of our enquiries, we hope on a future occasion to give our readers, and propose confining ourselves at present to the circumstances more immediately connected with her loss. These will not be found devoid of interest, more especially as they afford an illustration of the value of discipline, without which, all attempts, not only to rescue a vessel from a perilous position, but even for the preservation of life, may be rendered nugatory.

The *Reynard's* three years service was drawing to a close; she had been most actively employed on the Coast of China, in the suppression of Piracy, and had visited very many places on the sea board of that extensive country, from Hainan in the South to the Great Wall, the eastern terminus, of which is in the Gulf of Leotong in the north; besides Formosa and Loo Choo, and was proceeding to Woolwich to be paid off—when her career was thus suddenly brought to a close.

On Saturday, the 24th of May, she arrived at Hong-Kong, from Amoy and Foo-Chou-foo, and on Monday commenced a refit preparatory to her long voyage, that was greatly needed as she had not drawn a fathom of rope since the previous September. To give her crew an opportunity of paying their debts, &c., before leaving the station, a watch was allowed leave of absence, arrangements were made to sail for Sincapore and England on Thursday the 29th. Unluckily on Tuesday afternoon, the master of the British brig *Velocipede* arrived with information of the total loss of his vessel on the Pratas, and that he had left the greater portion of his crew, twenty-four in number, on the desolate island of that name, exposed to a lingering death, from hunger and thirst.

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The senior officer instantly ordered the *Reynard's* refit to be hastened, and by working all night she was enabled to get away at 10 A.M., on Wednesday, together with H.M. brig *Pilot*, which arrived from Wampoa, during the night, and was ordered on the same service.

The following is a statement of the circumstances attending the loss of Her Majesty's late screw steam-sloop *Reynard*, on the Pratas Shoal, on the morning of the 31st May, 1851, as given by Captain Cracroft.

"In obedience to orders from Captain Thomas Leeke Massie, senior Officer in China, a copy of which I have the honour to lay before the Court, I sailed from Hong-Kong at ten A.M. on Wednesday, the 28th May last, in company with Her Majesty's brig *Pilot;* the joint object of the two vessels was to rescue the crew of the *Velocipede*, twenty-four in number, from their perilous position, exposed to a lingering death from hunger and thirst on the Pratas Island, and as there was a fresh north-east monsoon blowing, (although unusually late for the season of the year,) I put to sea under sail only, having previously agreed with Commander Hickley as to our future movements. About ten P.M. the same evening, I took my departure from the Lemas; there was a heavy sea on, and in the night, during the greater part of which I was on deck, we split the fore-sail and driver. The next day at noon. the Pratas shoal bore from us S. 70° E., ninety-four miles, but the observation was an indifferent one, owing to the hazy weather, and soundings at 1h. 30m. P.M. gave more water than was anywhere marked in our charts of that locality. I should here mention that the master of the brig *Velocipede* was on board, and as we approached the vicinity of the shoals towards nightfall, I referred to him for information as to the direction and strength of the currents in that neighbourhood, which he had left only ten days before. The substance of his reply is embodied in the affidavit which I beg leave to lay before the Court, and have to regret that urgent business which required his presence in Australia, prevented him from being here this day to give evidence to the same effect.

"Accordingly at 9h. 15m. I brought to, main-topsail to the mast, but with the gaff sails set, the ship drawing about 1·8 or 2 knots through the water. During the night I scarcely left the deck, and at daylight on the morning of the 30th, the shoal bearing E. 3° S. twenty-six miles distant, I proceeded under steam and sail in the hope of arriving at them before ten A.M. at the latest, but at noon the observation placed the ship forty-five miles dead to leeward of the shoals, the body of the Pratas island bearing north, thirty-eight miles east, showing the existence of a south-west set of forty-nine miles from noon of the 29th. Good sights at 4h. 30m. P.M. shewed that the current had changed to the eastward, and the ship was kept turning to windward, the wind having shifted to E.b.N., varying occasionally from that point to N.E.b.E. under easy sail, and engines moving very slowly all night, in the expectation that at daylight she would be from twenty-five to thirty miles from the south-east end of the shoal, or even farther, owing to the currents previously *experienced* on the two previous days. According to Horsburgh there are no soundings on this side of the reefs, and a knowledge of this prevented my venturing the ship in the vicinity of them. But although keeping at so

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great a distance, my anxiety prevented my leaving the deck, and as the weather was inclined to get thick, an extra look-out man was placed on the fore-yard, and the strictest look-out was kept during the night.

"About 4h.10m. A.M., I told the first Lieutenant not to coil the ropes, as I wished to make sail at daylight, which was then just breaking, when my attention was directed to a peculiar luminous line on the water on the weather-bow; it resembled a moon-beam, but as there was no moon I thought it might be spawn, and as the ship's place when I pricked her off at 3h.30m. A.M., put her nearly thirty miles off the reef, I took no notice of it; not half-a-minute afterwards, however, the look-out forwards called out 'A shoal ahead!' and almost at the same moment the master, who was in the weather quarter-boat, and had just taken the cast of the lead, finding no bottom with 15 fathoms, called out, 'Stop her,' 'Go astern full speed." But the warning was too late, and before the yards could be squared, the ship took the ground forward, so gently at first that it was scarcely perceptible. My proceedings from this period are fully detailed in my report of the loss of the ship to the Senior Officer, a copy of which, together with my correspondence with Captain Hickley, and the opinion of the officers on the subject of the propriety of leaving the wreck without further loss of time, and embarking on board the *Pilot*, I beg to submit to your consideration."

Official Report of the loss to the Senior Officer.

"*Her Majesty's sloop Pilot, at Sea,*
"*4th June*, 1851.

"SIR.—It is my painful duty to inform you of the total loss of H.M.'s steam-sloop *Reynard*, under my command, on the reefs to the south of Pratas Island, on the 31st ult. She struck at 4h.15m. A.M. going at the rate of three and a half knots, under topsails, gaff mainsail, jib and driver; engines slowed and making about twenty revolutions.

"An attempt to back her off with steam and sails having failed, every exertion was made to lay out anchors astern; this, owing to the strong tide, and to the hawsers catching the coral rocks, was a matter of great difficulty, and before a strain could be hove upon the stream anchor and two kedges, the ship was thrown with her port broadside on the surf.

"The tide was now falling rapidly, and all attempts to lay out a bower with the sea breaking outside the ship, in a boat scarcely adequate to the service in the smoothest water, failed.

"About this time, ten A.M., the engineer reported to me that the boilers had separated, and the pipes of the 'donkey engine' had broken in two, and he feared from the appearance of the starboard bilge, near the waste pipes, that some serious damage had been done to the bottom.

"As it was evident nothing more could be done towards getting the ship off, and the engineer's report might prove correct, all hands were set to work to make a raft with the spars, upon which the ship's company could take refuge in the event of being obliged to quit the ship.

"As the flood tide made, a heavy sea came in, and the water rose rapidly in the holds in spite of all attempts to keep them free with the

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pumps. The ship now also began to beat very heavily, and the carpenter's mate reported to me, that from the appearance of several of the beams amidships, he feared her back was broken, and that it would be impossible to keep her afloat even if she could now be hove off the reef. I, therefore, directed my attention from that time towards saving the ship's company, a matter of much anxiety, as the boat could not contain half their number.

"I had, shortly after she struck, bearing in mind the service on which I was employed, dispatched a boat to the Pratas Island, about ten miles distant, with a supply of provisions and water to the crew of the *Velocipede*; and I now sent a supply for our own use, together with sails for constructing tents, under the direction of the second Lieutenant, and landed also the most sickly of the invalids.

"At daybreak on the morning of the 1st June, the appearance of the weather was very threatening, and the sea increased every moment, and as the total loss of the ship was now placed without a doubt, I ordered the masts to be cut away, the starboard guns and all the shot to be thrown overboard; cut away the stream cable, which, until now, had been kept taut; let go the starboard bower anchor, and paid out as much chain as could be got up, in short, lightened her as much as possible, in hope she would drive upon the reef before breaking up. At sunset it was blowing hard from the southward; the sea was making a clean breach over the ship fore and aft. The raft had been finished and moored inside the reef in smooth water, about half a mile distant from the wreck; to it I now determined to send all hands for the night, as from the ugly threatening appearance of the weather, I thought it possible the ship might not hold together till the morning; and at low water, six A.M., I had the satisfaction to find every one safe on it, although nearly up to the knees in water.

"The morning of the 2nd found our position by no means improved, the wreck still held together, but was at times scarcely visible through the clouds of spray, and as it was impossible to communicate with it, I determined, on the return of the pinnace from Pratas Island shortly after daylight, to remove the ship's company to that island and wait for finer weather to commence saving the stores. This operation, at considerable risk, was safely effected by noon, leaving a boat with the gunner and two men to take care of the raft.

"Her Majesty's sloop *Pilot* was cruizing off the reef, and I had informed Commander Hickley of our position, requesting him to repair to Hong-Kong for the assistance of a steam-vessel, but about ten P.M. I received a letter from him, strongly urging upon me the necessity of quitting the island as soon as possible; and after mature deliberation, and taking the opinion of all the officers, I determined on embarking the ship's company, and abandoning the ship for the present.

"The necessity for this step I trust you will coincide in. On Tuesday the 3rd instant, the party was withdrawn from the raft, and at three P.M., the embarkation was safely effected on board this vessel.

"I cannot conclude my account of this melancholy catastrophe without acknowledging with grateful feelings the anxiety and devotedness mani-

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fested by Commander Hickley, in keeping his brig in a most perilous position off the island for so long a period, in the hope of affording us that succour which eventually we found necessary; and I must confess my thankfulness to Almighty God, that under this dispensation of His Providence, no loss of life has taken place.

"I beg to enclose for your information copies of my correspondence with Commander Hickley, the opinions of the officers as to the propriety of embarking on board the *Pilot*, also the gunner's report of the state of the ship at sunset of the 2nd.

"I have, &c.,

"P. CRACROFT,

"*Commander of H. M.'s late steam sloop Reynard.*

"*Captain J. L. Massy, H.M.S. Cleopatra,*
Senior Officer in China."

Extract from the affidavit of James Welch, late master commanding the ship called the *Velocipede*, now wrecked on the Pratas Shoals, taken before W. Gaskell, Notary Public at Hong-Kong, on the 21st day of June, 1851.

"On the 20th of May, we left the Pratas Island in the long boat, in steering a course north-west and by west, with the wind free, we found on the 23rd of May at daylight, when we had made the land, that we had been set forty miles to the northward."

"*H.M. Ship Reynard, Sunday, June 1st.*

"SIR.—The *Reynard* is a total wreck; will you go to Hong-Kong with the intelligence to the senior officer, and take the invalids with you; we must do what we can to save stores, &c., and as we have made a good raft may succeed, but the ship will go to pieces with the least wind. She went ashore at 4h. 10m. A.M., yesterday morning, going about three knots, and bilged in the engine-room on a coral reef. I have no time to add more, but that I am, &c.

"P. CRACROFT."

"*Commander Hickley.*"

Copy of Captain Hickley's Letter.

"SIR.—There is bread, but in the name of anything a man can urge, *do* come on board of us; you can save nothing of a thousandth part of the value of the lives you risk by staying. I should only be the means of, in all probability, an order coming for you to leave immediately from the senior officer. Believe me, I look on the right side, you only to the hollow idea of saving your stores, in all not worth the charge of a steamer. The water will sicken your men; you will find all wishing to come, and no work to be done with such men, even were there any worth doing. Oh! if you knew, how anxious I am for you to come. You cannot for a moment be suspected of leaving her too soon, and it will only be an act of madness in refusing the present chances. Everybody's evidence, 'Anderson's' I have, and he heard others. Captain Massie,

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of all others, insisted to me that property was to be a last thought. Pray listen to reason, no steamer in the world would be allowed by her insurance to go near that reef; we are close off; some can come to-night; keep a fire burning all night, and we can keep close to, and all can come off in the morning or course of the day. Should the wind be from the westward, or almost anywhere but where it is, I do not know when you could be taken off. Should the senior officer approve on getting to Hong-Kong, you might come back in the steamer, though none, I think would undertake anything but bringing men off.

"Pray do not hesitate, but calmly consider the risks you run for valueless impossibilities, (excuse me,) but these are times to speak one's soul. Again, come for God's sake.

"Yours, &c.

"*Pilot, Monday.*" "V. G. HICKLEY."

Captain Cracroft, (from the Overland China Mail).

Admiral Austin having determined that the court-martial on Captain Cracroft for the loss of the *Reynard*, should be held at Penang, the officers and crew of that vessel sailed on the 19th, in the *Sphynx*, which had been here for that purpose. We do not pretend to anticipate the result of the trial; but we can safely say that the honourable acquittal of Captain Cracroft will afford universal satisfaction to the foreign community in China, by whom he was not suffered to depart without an assurance of the esteem in which he was held by them.

A desire on that subject having been expressed in more than one quarter, it was proposed to present him with an address, but it being objected that such demonstrations, like parliamentary thanks, were reserved for officers in chief command, the more common-place mode of a testimonial, to which there seemed to be fewer objections, was determined on; and accordingly a paper with the following heading was privately circulated:—

"A general desire prevails in this part of China, and, it is believed at the Northern Ports also, to mark their sense of the many excellent qualities of Captain Cracroft as a gentleman, but more especially the esteem entertained of him as an officer, whether engaged in promoting the interests of commerce, or in executing the services entrusted to his judgment and zeal, during the time he has commanded H.M.S. *Reynard* on the China Station.

"In order to afford the means of manifesting the sentiments of the community, and their sympathy for Captain Cracroft in his recent misfortune, it is proposed to present him with some testimonisl of their esteem, to be afterwards fixed upon, subscriptions for which, *limited to five dollars*, will be received at the Branches of the Oriental Bank in China."

In Hong-Kong the paper was signed by nearly every one who saw it, the names exceeding in number the entire jury list. A meeting of subscribers called by circular was held some time ago, at which Mr. Camp-

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bell and Mr. Shortrede were appointed a committee for carrying out the intentions of the subscribers; but as Captain Cracroft was summoned to Penang before the Canton and Coast Lists were returned, these gentlemen not being able to complete the duty with which they were entrusted drew up a letter, which along with the Hong-Kong Lists was presented to Captain Cracroft a few hours before his departure. The letter and the reply to it were as follows:—

"*Hong-Kong, 18th August*, 1851.

"DEAR SIR.—We have been requested to convey to you the enclosed document, signed by a large proportion of the foreign community in this part of China, who are desirous of offering you some lasting testimonial of the esteem in which you are held by them. The suddenness of your departure prevents our now completing the agreeable duty with which we have been charged.

"It may not be out of place however to say, that we only echo the general voice in assuring you, that throughout the Coast of China,—which you have successfully navigated from Hainan to the Great Wall, the zeal you have manifested to promote the interests of commerce and civilization; the judgment and discretion with which you have executed the various services in which you have been employed; and we may add. your obliging disposition, and the urbanity of your manner, have secured for you the approbation of all parties, of every calling and country in China; as is best evinced by the names attached to the enclosed paper, which, we have reason to suppose the want of opportunity alone has prevented others from signing.

"Assuring you that our community will at all times take a lively interest in your welfare and happiness.

"We remain, &c.

"A. CAMPBELL,

"*To Com. P. Cracroft, R.N.*" "AND. SHORTREDE."

"*H.M.S. Minden, Hong-Kong,*
"*18th August*, 1851.

"GENTLEMEN.—Suffering as I am from a depression of spirits, not difficult to be accounted for, I feel quite inadequate to the task of replying as I should wish to the letter I have just received, and of returning properly the thanks due to those whose kind feeling toward me has been manifested on the present occasion.

"Scarcely two years have elapsed since I arrived on this station, utterly unknown to the community in China, but deeply anxious to fulfil the duties entrusted to me. How I have succeeded, this testimony of your approbation, thus spontaneously expressed, sufficiently testifies, more especially as I observe in the list enclosed very many names personally unknown to me.

"But for the calamity that has befallen me, I should have remained in utter ignorance of the general good wishes that followed H.M.S. *Reynard* on her departure from the colony; and I cannot help assuring

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you, gentlemen, that the interest I took in Hong-Kong at that period, will from henceforth be superseded by one of a much more permanent nature.

"I beg most sincerely to thank you for the flattering address and testimonial with which you have been pleased to present me. They will ever be viewed with honest pride by me and mine.

"I have the honour, &c.

"P. CRACROFT, *Commander of H.M. late steam-sloop Reynard.*"

"*To Messrs. Archibald Campbell, and Andrew Shortrede.*"

THE following letter from a midshipman on board the *Reynard*, gives an interesting account of proceedings at the time of her wreck.

H.M.S. Minden, Hong-Kong, 18th June, 1851.

What a change since last letter! I can imagine you all sitting round the breakfast table, taken aback with astonishment at such a beginning. Her Majesty's ship *Minden*, too, how does he come to be in her? Here is my answer: the poor old *Reynard* is no more—she is by this time in very minute portions floating about, in the vicinity of the 21st parallel of north latitude, and 106th meridian, east of Greenwich. With this introduction I dive into the narrative of how it happened, with a description of my own feelings during the catastrophe. I forget the date of my last; but, however, we got in shortly after I finished it, and were barely in time for the mail.

As soon as we anchored we of course got ready for starting home as quickly as possible, but we had a deal to do, so did not intend to start until the 30th. On the 27th, however, intelligence reached us of the wreck of an English brig on the Prata Shoal, which is situated about 150 miles south-east of Hong-Kong. The captain of the brig came across in an open boat to give notice here, and to get assistance for his men who were suffering from want of food and water on a small coral island on the shoal. On account of this we were ordered to work double tides, so as to be ready to start for England on the 28th, and to render assistance to the shipwrecked crew on our way down. Accordingly on the 28th we sailed with the pilot in company for the shoal—we had foul winds, so did not get near them till Friday evening. When darkness came on, we steered so as to get to the island at daylight, giving the shoal, which we should have to pass, a good wide berth.

At about a quarter-past four of the morning of the 31st, I found myself out of my hammock, and using the most strenuous endeavours to put my jacket on inside out. It was not until I had discovered my mistake some seconds, and had observed that every one else was attiring himself with equal expedition, that I began to consider how I came out of bed at all. To this moment I have not the least idea how I turned out. Every one else seemed struck with this idea at the same moment, and we were about to consider whether we had not better turn in again and say nothing about it, when we heard on deck a confusion of voices,

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which can only be expressed by one word, "a row." We were on deck almost immediately; indeed, the whole of what I have described did not take up more than six to eight seconds. We found the ship quite still, but hard and fast on the reef. The sails were all aback, and the engines going astern, but both failed to move her.

Stretching out on each bow was a long light coloured line, and this was all the indication there was of one of the most dangerous reefs in the world. It being fine weather, and but little swell, the ship lay quiet enough while we got the boats out and prepared to lay out an anchor to prevent her getting broadside to the reef. We laid out one small anchor, and got the cable through the stern hawsehole, and hove a good strain on it. (I am afraid I am getting rather nautical, but I can't help it in description.) It soon parted as the sea got up, so we laid out a larger one, but by this time she had begun to swing on the reef and to bump a little on the rocks. The last anchor was let go on the reef, but it was so steep that it slipped down into 400 feet of water, and we nearly lost it,—however they managed to hold on the end of the cable, and we brought it to the ship in the same manner as the last, without the least effect, however, for the ship by this time was broadside on, and beginning to strike the ground very heavily. All hope of saving the ship was out of the question now, for she began to fill slowly, and strained so much that the engines were rendered useless. When we reached this stage of the proceedings we went to breakfast, to prepare ourselves for work afterwards. In the meantime the ship fell over on her starboard side, thus exposing the deck to the sea, which began to rise with the tide, and every roller that came foaming in, struck the ship and raised her upright, and when it had passed she came down again with a crash on the rocks, sending every thing loose on deck flying, and shaking the masts so that we all expected them to go by the board.

Our rigging being wire, and very elastic, held on; if we had had rope, I am sure the masts would not have stood as they did. All this time we were obliged to hold on as hard as we could, as the ship took our legs from under us at every surge, and if we had fallen down to leeward, we should not have picked ourselves up again with whole bones. After breakfast we turned the hands up, and divided them into two parties, one of whom remained on board, in charge of the first lieutenant and midshipmen, and the other were in the boats, under the lee of the ship, to coustruct a raft, so as to save provisions, &c., under charge of the master. We were on a part of the reef about eight miles from the island before mentioned; we could just see the tops of the trees. We sent a boat up to the crew of the brig with provisions and water. All this time we saw nothing of the *Pilot*, having parted company from her the morning after leaving Hong-Kong, but we knew that she would most likely go to the island first.

The party on board the ship proceeded to get the spars down from aloft. It was hard work, and very dangerous, but happily no one was hurt. As we got the spars down, they were put overboard, and lashed together by the people in the boats, so that in about an hour and a half we had all the spars overboard, except the lower masts. We were all

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pretty well tired after this was done, as we had to work hard, and were glad to have a little rest. I was leaning against a gun watching the raft progressing, and thinking of what else was to be done, when I began to feel as if I should be very glad if the ship went to pieces at once, and we were all at once drowned. I felt as if it was quite absurd to save ourselves, when we might just as well be drowned comfortably. Then I felt as if I should like to lay down and never get up again, and then I heard voices shouting in my ears, and felt water on my face.

I opened my eyes, and felt a whole host of people around me, raising me up, for I was flat on the deck: from this I inferred that I had fainted, though for what reason I do not know, except from over-excitement, for I am not in the habit of performing manœuvres of that sort, and I was quite well and at work again in half an hour.

When the raft was finished it was getting dark, so it was moored alongside, and we picked out the best sleeping places we could on deck, for it was not exactly safe to go below, in case of the ship's going to pieces in the night. It rained heavily all night, so none of us were particularly dry when daylight came, at which time we all got up, and proceeded to get provisions up from below. This was a work of much difficulty, as the water had risen considerably in the night, and as the tide was rising, and there was every chance of her filling more.

The raft was towed inside the reef, at the distance of a quarter of a mile from the ship, and anchored there. It was only level with the water, so we did not expect it to carry much weight; however, it was the best that could be made under the circumstances. A large quantity of the provisions and water were taken across the reef, and put in the pinnace, when she started for the island, to erect tents and get them ready for our reception, and as the ship was becoming more and more unsafe every moment from the continual bumping on the rocks, it was now that we began to think of saving some of our own things, as all the provisions that could be got were on deck, ready. Accordingly I had ventured down below, with the intention of saving my sketches and a few clothes; but when I got below, I found the water up to the beams of our berth, and when I went to look for my chest, I found that it was in minute particles, so I was glad enough to get on deck again; for as the tide rose the surf rushed in with redoubled violence, and caused the ship to surge so violently that every thing went crash! crash! from one side to the other, clearing away every thing stationary. The ship now worked so much that it was determined to cut away the masts. I never shall forget the melancholy feeling with which I saw the masts fall over. We all had, I do not know for what reason, a sort of glimmering hope that we should not lose the ship, but when the last mast fell with a crash, whatever hopes we had went with it, and when we looked at the stumps and ends of shrouds, and the desolation which appeared all along the decks, you never saw such a set of blank faces as we presented. For myself I could have blubbered with great comfort. The noise of the water rushing about below was terrific all this time, and the only safe plan of remaining on deck was to sit down and hold on "like bricks." The starboard guns were now hove overboard, in the hope that she might fall over on the

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other side; for if she remained in her present position it did not seem likely she would hold together, as she already showed signs of parting amidships. She soon did as we wished, for one large wave striking her, threw her perfectly upright, and then all the weight being on the port side, she fell over, thus presenting her bottom to the sea. This was safer; but, as we found to our cost, not so pleasant, for every sea instead of raising her, came right over us, washing everything off the upper decks that was not secured. We were like a parcel of drowned rats in five minutes, and woe to any one who was standing up unsupported; he was knocked down by the sea, carried away, and might be observed after a few minutes puffing and blowing, amidst all sorts of confusion, to leeward.

Notwithstanding all these disadvantages, we managed to keep our spirits up; and from the captain downwards were as merry as crickets, every one becoming as facetious as possible. I forgot to say, that just before we cut away the masts, we saw the *Pilot* endeavouring to beat up to us, but, after two or three tacks, by which she apparently got no nearer to us, she bore up for the island, and we could occasionally see her mast-heads over it. We had got three or four casks of pork and water on the raft, which was all we had, or could get at, besides what had gone to the island. Towards evening it looked as if we should have wind, so it was determined to quit the wreck before dark. The ship being pretty quiet, I went below to see if anything was left which might be saved and I never saw such a complete clearance as had been made. There was nothing of any kind a foot long. Everything was smashed into little fragments; all the partitions were washed away, and all was clear abaft the engine-room. Cabin, gun-room, steerage, were all in one. As to our berths there was not the slightest trace of anything that could be construed into a mark of where they had once been; except that in one corner there was a nice little pudding, composed of plates, dishes, bottles, and glasses, knives, and forks, all smashed into small pieces of half an inch in size. This was the case with the gun-room, and also the cabins; each had its own peculiar corner full of smashed articles. In one cabin all the things had become, from the constant washing, woven into a complete rope; and in this form were passed on deck, and coiled down.

Just before sunset we made preparation for quitting the wreck; but as we had only our smallest boat on our side of the reef (the others not having water enough to cross,) it took a long time, for the boat could not take more than five at a time, and even with that number she was nearly capsized two or three times in the surf. We saw all the men off first, and then we (the officers) went together, landed on the reef, and dragged the boat over to the raft, which was at this time aground. We were now about eighty strong on the raft, which at this time was not particularly dry. We had with us three boats, two being up at the island capable of holding about twenty-six, so the remainder would have to remain on the raft all night.

I have now to mention an action on the part of Captain Cracroft, which greatly raised him in my opinion, and I am sure in every one else's present,

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which was this. It was Sunday night (I am sure I hope I shall never spend such another); as soon as we were all on the raft, Captain Cracroft called all hands round him, and made them a speech as follows:—"My men, we have left the *Raynard*, where we have been together so long, probably for the last time. I am sure there is not one amongst us who does not know that, although we have no ship, we are just as much under martial law as ever we were; I therefore expect, and I am sure I shall receive, implicit obedience to my orders and those of the other officers. (Hear, hear.) Now, my men, this is Sunday, and we have always been in the habit of keeping our Sundays properly as long as we have been together, and I do not think we can now do better than to offer up a prayer to Almighty God for His mercies in preserving us thus far alive." He then repeated a short prayer, to which we all returned a fervent "Amen!" There was a dead silence for a few minutes, and then one of the men sung out, "Three cheers for the captain!" so we gave the three, and then we gave him three more, and then three more to make it square, and then we went to supper—the men on raw pork and rum, and the officers on beer and raw ham. It was not very inviting, but we were very hungry, so that gave it a relish. After the beer and ham, we looked out for sleeping places, but these were not so easy to find, and for this reason, one corner of the raft had got fast in the coral, and as the tide rose, the corner being fast, of course the water came above the raft, which was anything but pleasant, as I found to my cost afterwards. I had brought a wet blanket from the wreck with me, and I hoped to manage pretty well with the aid of it, but afterwards I gave half of it to the first lieutenant, as he looked rather miserable. I then took my own peculiar half, and went to the highest part of the raft hoping to get to sleep, for I was very tired. I had not been there half an hour when I found myself floated out and almost off the raft. I got up stiff and intensely cold from lying in the water, and wandered seeking where to go. I found the water up to my middle everywhere, except at the corner I had left, all the men were singing in chorus, (up to their middles) to keep their spirits up. I could not help laughing though I was so uncomfortable, it was so ridiculous to see a whole lot of people wandering about in the water, and roaring away at the top of their voices. I found one of my messmates lying at full length on a hen coop, clear of the water, and seeming so comfortable that I felt greatly tempted to push him overboard, and take his place; however I contended myself with sitting down beside him.

Daylight was now beginning to show itself a little, when one of the boats came close to where I was sitting, so I got into it, and lay on the top of one of the men; he struggled rather violently at first, but I was too comfortable to move for him, so he was obliged to bear it. I managed to get about an hour's sleep here, and then we got up and looked about us. I found that my messmate of hencoop notoriety had been floated off the raft, and tumbled overboard shortly after I left him.

The first lieutenant met with a similar fate, having passed the night in an empty pork cask, which overturned with him as soon as it floated. Being only half awake when they lifted him up, he was very anxious to

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"go below to change his clothes." The first thing we did after all getting awake was to serve out a wine glass of rum all round, which I was very glad to get. I was none the better for the raw ham and salt water. We sent a boat to see if she could get to the wreck, but the surf was so heavy that she was obliged to come back without reaching her. Upon this we all started for the island. and arrived there in about three hours. We found it a low island, in the shape of a horse-shoe; a beautiful clear bay running up between the two arms. Thousands of sea birds were hovering round and over it, making a most discordant noise; there was a quantity of short brushwood and bushes all over the island, and a good many stunted trees. As we passed up the bay we saw the *Pilot* off the island under sail, for there is no anchorage near. Our tent had been reared on the right hand arm going up the bay. I landed close to it, and we all went up and lay down under the shade, quite tired out, but not until we had refreshed the inward man with some cooked provender. After we were refreshed, the men were divided into parties, some to build a wall round the tent, and arrange it, some to get up the provisions from the boats, and some to dig wells. I took a well-digging party, and in a short time we made a very respectable well, with bucket attached, though I cannot say the water was particularly good. After this work was done, the several parties were called in, and we had supper of boobies' eggs and rice, and very good provision it was. At this time Captain Cracroft intended remaining on the island, and sending the *Pilot* with the intelligence to Hong-Kong. After we had all turned into our sandy bed, however, the *Pilot's* jolly-boat came on shore with a letter from Captain Hickley, using such strong arguments to induce Captain Cracroft to come on board the *Pilot* with the ship's company, and desert the wreck altogether, that he determined to do so—accordingly next morning we left the island, and bid good-by to our old ship for ever.

Behold us then once more on a man-of-war's deck, and looking more like a lot of pirates than anything else, not a soul amongst us having a single thing that he could call his own, except a few ragged clothes we had on; however, by dint of begging, borrowing and stealing, we managed to get washed and dressed in something respectable. We arrived at Hong-Kong on Tuesday morning, and since that we have been on board this ship, which was originally employed as a store-ship, but is now cleared out for our reception, and that of 100 of the 59th regiment. I do not know what they will do with us yet. I suppose we shall be sent home in a merchant vessel, but I cannot say till we hear from the Admiral, which we can't do for a month. It is possible the court martial on us will be held out here, but I think it is not likely. I have been obliged to do now what I could never do under any other circumstances, and that is, I have drawn an extra £10 bill. I would not have done so even now, only that Captain Cracroft thought it the only thing to be done, having lost every single thing belonging to me; I must have clothes and food, and these cannot be got without money. I have written to Mr. Codd to tell him, and have drawn at ten days, so that there will be time enough to arrange about it; of course I can only

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consider it as a loan, for I don't think I ever ought to exceed my allowance. The Admiralty will give me some remuneration for my loss when we arrive in England. I do not know how much it will be, but I think about £30. I am sorry for the loss of my sketches, more than anything else. I had about eighty views of China, and to lose them all at once was very disgusting. All the people here, except the tip-top society, have been exceedingly kind to us all—giving and lending right and left. They have got up a subscription for the men, and going to present Captain Cracroft with a piece of plate, and I don't know what they are not going to do. I think that now I have spun this letter out to a sufficient length. We are just beginning to get settled in our present position, in which at first we were very uncomfortable. I suppose you will consider me a sort of modern Robinson Crusoe on a small scale. I am quite willing to bear that character, only I have no wish to be thought of as a dirty-looking fellow, with a hairy coat and a worn-out umbrella over my head, or in any other character, except that of yours, &c.

THE CARGADOS GARAJOS SHOALS.—*With correct positions of the Islets and Reefs deduced from Sir Edward Belcher's recent survey thereof.*

Madras, November 4th, 1851.

MR. EDITOR.—1. The Editor of the *Mauritius Commercial Gazette*, has given a brief account of the wreck of the French ship *Prophete* on North Island, the north-eastern isle of that very dangerous shoal, the Cargados Garajos, and then furnishes a gratifying statement of the providential rescue of her crew and passengers after much suffering during a stay of forty-two days on that desolate island; he then says "As far as we can entertain, this accident was caused by the strength of the currents which carried the vessel out of her course.

"We call the attention of masters of vessels to the necessity of furnishing every information, derived from their observations, on the nature of the currents near these islands. Any note of the kind recommended will, we are sure, be gladly received and made use of, for the benefit of science and navigation, by the Meteorological Society which has recently been established here."

2. On this very interesting subject I have received the following information from Captain Furnell of the ship *Seringapatam*, dated Bombay, September 23rd, 1851.

"We left Portsmouth on the 1st of July, but did not round the Cape until the 29th of August, whence we experienced heavy north-west gales, and scudding under a double reefed main-top-sail and reefed foresail we arrived at the Mauritius in fourteen days, (12th September.)

"On the 14th arrived the *Isabella Hercus*, which ship had left the Mauritius a few days before we arrived for Calcutta, intending to pass

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to the eastward of Cargados Garajos by eighty miles, but a very strong current setting to the westward drifted them down upon the isles, and was instrumental in saving the lives of all who were wrecked in the French ship *La Prophete*, also from the Isle of France to Calcutta. The poor creatures had been on the reef forty-two days living, or rather say existing, on wild salad, a cask of brackish wine and a few shell-fish, a strange mixture, but no less true. I had the account from one of the survivors; think he said there were twenty-eight in all; among them one young French female a passenger. Poor young lady she began her troubles early enough. He told me that two or three days more would in all probability have sealed their fate, as they were suffering fearfully from constipation of the bowels when the *Isabella Hercus* providentially hove in sight and took them off; a strange interposition of Divine Providence, for the commander told me he had the greatest difficulty in keeping his ship to windward to pick up the boats from the *strong* current. Yet strange to say we had not the *slightest current* in passing. Certainly we were to the *westward* where perhaps the currents may be checked. I think it is at all times the most advisable plan to go to leeward, even if you are sure of your longitude."

"Off the Seychelles or in lat. 7° 12′ S. Island Coetivi or St. Francis, bearing west some eighty or ninety miles, we had a severe storm from the S.S.E., the wind did not veer, but for eight hours it blew a perfect hurricane, with a sea as high as you would meet with on the edge of the Bank of Agulhas; was obliged to carry two close reefed topsails to steady her, when the sheets went and was compelled to clue all up. I never saw it blow harder, it fairly howled and I fully expected we should have lost our masts, the rigging having drawn through the seizings, and the sea going clean over all. Fortunately in the evening it lulled, and the sea went down very fast which enabled us to secure the masts, it was constant heavy rain nearly the whole of the time; but the wind remained steady. I mention this more particularly because in that valuable work of Piddington's he says, "At the Seychelles and in the Chagos Archipelago, gales and hurricanes are said to be *unknown*, and the *sudden* fall of the barometer and aneroid alone, saved me from being caught with a press of canvass, and I should have lost my masts to a moral certainty: the barometer stood at 29·50, and the aneroid 29·55, sypiesometer 29·30. I never dreamt of having such a breeze."

3. Reverting to the questions put by the Editor of the *Commercial Gazette*, I have taken some pains to afford him the information he has called for, which is contained in the following abstract.

The Windward Passage.

Prophete.....	Belard..	29th July.....	Wrecked on Nth. Island 31 Jly. 1851	Strong westerly current. Current to the westward of 80 miles and owing to so unexpected a deviation from her given course, the passengers and crew of the "Prophete" are indebted for a happy deliverance.
Isbaella Hercus	Houston	9th Sept.....	Sighted Nrth. Island 11th Sept.	

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The Leeward Passage.

Ships.	Comders.	Left Port Louis.	Passed to leewd. of Cargados.	Remarks when in the parallel of the Shoals.
Clarissa..... ...	Andree	18th Sept. 1850	20th Sept.....	Little or no current.
Mary Anne	Darby ..	19th Aug. 1851	21st Aug.....	No current.
Futty Salem....	Carrew.	21st Do.	23rd Do.....	Current set her 2 points to leeward of her crse. about 50 miles in 48 h. to the W.N.W.
Teazer.....	Burton .	3rd Sept.....	5th Sept.	Little current to the eastward.
Diadem.....	Cayzer .	17th Sept	19th Do.	A fresh trade—but little or no current.

4. The Mauritius is well known to be situated within the full influence of the south-east trade wind, and it is but reasonable to expect that the prevalence of such a wind would force a current of sea along with it, and as the Cargados Garajos is in the very heart of that trade wind, it is still more reasonable to expect such a set of current in the parallel of that shoal. We may however, readily imagine that such a range of islets and sandbanks must obstruct—impede, and even diverge its direction at times, and thus we can easily comprehend its velocity on one side of the shoal, and its check or cessation on the other side, and such a contrast was experienced by the *Prophete* and the *Isabella Hercus* to windward, and the *Clarissa*, the *Mary Ann*, the *Teazer*, the *Seringapatam*, and the *Diadem* to leeward.

5. The bearings and distance from Port Louis to the northern, and to the south-west extreme of the Cargados Garajos shoal are as follows:—To Albatross Island, which is the northern extreme, N. 26° 45′ E. 264 miles; to Coco Island (south-west extreme) N. 29° 10′ E. 230 miles; and as the trade wind frequently blows from the eastward of south-east, even as far as due east, it is obvious that there is considerable risk in an attempt to pass to windward of so extensive a shoal, which on its eastern limit is declared by Captain Sir Edward Belcher, who surveyed it in 1846, to be *unapproachable;* and fully concurring in opinion with Captain Furnell, I am confident that it is very desirable that all commanders of ships, sailing from Port Louis and bound to the northward, should be instructed and strongly advised to shape their course to the westward (to leeward) of the Cargados Garajos shoal, which is a safe direction at all times, whilst the other is an exceedingly dangerous one.

6. Under these circumstances, it is very evident that every prudent and cautious commander, who duly considers this subject, would not hesitate which course to take; but it is of great importance that whilst he avoids the windward track, he should bear in mind the danger to be apprehended unless he so carefully shapes his course as to steer clear of the dangers to leeward; because it may so happen that with the best chronometers and presuming on a westerly current, whilst there may be

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none whatever, he may haul up too close to the south-west extreme of the Cargados Garajos bank, and come so suddenly on the reef projecting from that islet, that escape would be impossible, as has been proved by the wreck of the ships *Letitia* and *Mary*, which in my opinion were lost under those very circumstances. Therefore, to guard against such disastrous consequences, I am of opinion that it is highly expedient to erect a lighthouse on a moderate scale on Coco Island, and such a safeguard would give full security to the leeward passage. I ventured to suggest this measure in my letter dated the 23rd of January last, when the loss of the ship *Mary*, and the alleged inaccuracy of Horsburgh's charts induced me to write on the subject, and consequent on that controversy, I sent to England for Sir Edward Belcher's survey of the Cargados Garajos shoal, with which I am now enabled to point out the true positions of the various islets and reefs, and offer them to the notice of mariners who are not so well acquainted therewith as they ought to be. Coco Island, the south-west extreme is in lat. 16° 49′ 15″ S., long. 59° 30′ 30″ E., and reefs project from this islet nearly two miles to the westward and one mile to the southward, N. ½ E.; about nine miles from Coco Island lie the Baleine rocks, in lat. 16° 40′ 50″ S., long. 59° 31′ 15″ E., awash, a very dangerous shoal; and in 16° 36′ 15″ S., and 59° 32′ 15″ E. is situated Frigate Island; and N. ½ W. from thence, distant three miles, lies Pearl Island, whence N.N.E., two miles and a quarter are the Pearl breakers; then in a north easterly direction is Siren Island, in lat. 16° 28′ 15″ S., long. 59° 35′, from which Establishment Island bears about N.E.b.N. two miles; and North Island, on which the *Prophete* was lost, is in lat. 15° 23′ 25″ S., and long. 59° 39′ 15″ E., and thence N.N.E. two miles and a quarter is another dangerous reef, (undefined) in lat. 16° 21′ 30″ S., long. 59° 40′ E.—and Albatross Island surrounded with broken water a quarter of a mile in extent, which is the northermost position, is in lat. 16° 15′ 15″ S., and long. 59° 35′ 30″ E. Mapare a small islet is the eastern limit of this extensive group, and is in lat. 16° 35′ 45″ S., and long. 59° 42′ 45″ E., but the whole of the Eastern Isle is lined with reefs and broken water, and is, as I have already mentioned, declared by Sir Edward Belcher, *unapproachable.*

7. The western line of sandbanks, reefs and islets, is guarded by a bank of soundings, so that a due attention to the lead, would give the mariner a timely warning of his approach to danger. For instance, south and west of the Cocos, three or four miles, are soundings of thirty-four to thirty fathoms; five miles due west of the Baleine reef are thirty-three fathoms, with sixteen and nine fathoms close to the rocks, whilst in the parallel of Frigate Island the bank extends due west nine miles, viz., from thirty-two to seventeen fathoms close to the reef projecting from that Island; according to the survey the current sets to the westward with great force in August. It is difficult to procure water, and it is very bad; only three cocoa-nut trees remain on Coco Island where Sir E. Belcher has planted fifty others. Fish plentiful, a few Mauritius fishermen reside during the fishing season on Establishment Island, which is situated in lat. 16° 26′ 35″ S., long. 59° 36′ 35″ E.; variation of

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the compass, 8° W., high water full and change 2h. rise four feet. The islets and sandbanks, which comprise this remarkable shoal, are very little above the level of the sea at high water mark.

8. I had written thus far, when I noticed in yesterday's *Spectator*, the Editor of the *Englishman's* remarks on this shoal, and as it appears from the other observations which I have seen, that North Island is considered as the northernmost position of the Cargados group, it is of very material consequence that such an error should at once be corrected, as Albatross Island lies N.N.W. from North Island, distant nine miles; but it has escaped his notice that the *Prophete* was lost in consequence of pursuing the windward track; and with reference to the objection made to the erection of a lighthouse on one extreme of danger because it would leave other dangers unguarded—it is necessary to bear in mind, that all vessels adopt the leeward track as they undoubtedly should do, their first approach to the shoals would be guarded by a light fixed on that position which is the southernmost, viz., the Coco islet—and by guarding that point the whole extent would then be considered as perfectly safe: because, when that light would be discerned, nothing but the most shameful neglect could lead a ship into danger. The necessity of such a safeguard is obviously shewn by the wreck of the H.C.S. *Cabalva*, in 1848—of the ship *Letitia*, in 1845—the *India* and the *Mary*, in 1850. These vessels were all lost on the southern and western reefs during the night, and when we take into consideration the increase of traffic to and from the Mauritius, there cannot remain a doubt of the expediency, and the utility of providing lights and beacons where the fatal lessons derived from dear-bought experience, point to so essential a remedy.

9. Sir Edward Belcher's excellent survey, from which I have drawn the foregoing information, was published on the 4th of August, 1848, and sold by the Agent for the Admiralty Charts; 21, Poultry, London. I believe the cost is not more than two shillings.

10. Since the perusal of the *Englishman's* remarks, I have again most carefully measured the positions as laid down in the chart referred to, and Coco Island is exactly as I have stated, viz., in lat. 16° 49′ 15″ S., long. 59° 30′ 30″ E., and a wreck is noted on the chart one mile due south of this islet.

I am, &c.,

CHRIS. BIDEN.

CAPTAIN PEACOCK'S "REFUGE BUOY-BEACON."

THE ordinary buoys in use on the English Coast and elsewhere for pointing out the position of dangerous shoals and sand-banks are of a conical form, made chiefly of wood, and hooped like a cask, being moored with the apex or sharp end downwards, and owing to this *erroneous* shape, in a strong tide-way and heavy sea, they are at times pulled nearly under water, tugging with an immense strain upon their moorings, and frequently breaking adrift at the very time when most required; moreover from their construction they twist and twirl so as to render them impossible of approach or refuge for

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saving life in cases of shipwreck. Captain George Peacock, the Superintendent and Dock Master of the Southampton Docks, has invented a new kind of mark-buoy or floating beacon, which from its peculiar form and construction and the manner in which it is moored, rises over the *crest* of the waves in the heaviest gales and strong tide, and is not acted upon like the ordinary buoy *; it is moreover capable of holding ten or twelve persons with ease in cases of contiguous shipwreck, and of affording them a safe temporary asylum without risk of being washed away; it being in fact at once a buoy, beacon, and life-boat, and the cost of it scarcely exceeds that of the ordinary buoys now in use. Captain Peacock having in July last submitted his plan and model to the Pier and Harbour Commissioners of Southampton, those gentlemen at once decided upon laying down one of these "buoy-beacons," off the Spit, at Calshot Castle, and it having been constructed under the directions of the inventor it was laid down on the 12th of August last, and has withstood the whole of the severe gales of the last seven months without showing the least symptom of injury or leakage.

The hull, which is of sheet iron, is a semi-oval shape, like the horizontal half of an egg, being ten feet long, seven feet broad, and three feet deep: the deck, a perfect oval, is convex with a man-hole and cover in the centre. A keelson of pine timber, eighteen inches deep and fourteen inches broad, is fitted to the inside, running fore and aft, and fayed on the shape of the bottom upon the rivets, and the mooring bolt with a broad bearing-shoulder is passed diagonally up through this keelson and firmly secured by a large nut over a plate of iron or washer on the top of the same, the bearing-shoulder having a piece of American packing under it to insure it from leaking, and the bottom in this part having a thick strengthening plate. This mooring bolt is fixed at one-third the length of the hull from the large end or breast, and along the other two-thirds of the bottom an iron keel fifteen inches deep and 250 pounds weight is rivetted on with angle iron, and bolted through the keelson, which keeps the buoy steady to the tide and also gives it stability. To the side or rim, which is eighteen inches deep and inclined inwards, uniting the deck with the bottom, eight triangular shaped wooden uprights are fixed at equal distances in outside sockets bolted through with nuts and screws; these stancheons are nine feet in length, terminating and dovetailing into an oval platform five feet by four, and are braced horizontally by two rows of corresponding pieces at equal distances from each other, the first row being four feet from the deck, and the divisions above this are nearly filled up by the vertical battens to the top of the platform, all firmly united with hoop iron. There are also two diagonal braces of rod iron, which cross each other in the centre of the structure, and seats are fixed at each end on a level which the first horizontal brace pieces, affording accommodation for six persons, and leaving standing room for six more in the centre of the deck. Under the platform a large bell is fixed with four swinging clappers hanging round it from the platform and striking the outside, whilst the centre clapper has its stem below the hammer, elongated with rod iron to five feet, terminating in a wind-cross of thin sheet-iron, so as to ring the bell with the least breeze when the water is too smooth to affect the clappers.†

Above the platform arching from side to side is a semi-circle of square iron rod, which assists in uniting the sides or top ends of the upright or stancheons to the platform, and to which rim is rivetted a plate of thin iron,

* The principle of the action of this buoy is somewhat analogous to that of a kite, which rises upon suddenly pulling on the string.

† This is an improvement upon the original plan which has suggested itself to the inventor by experience, and is about to be carried out; at present there are two bells, which are found to be too small.

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with the name of the buoy painted on it, and above the centre of this arch, forming the apex of the "buoy-beacon," is a spindle carrying a pyramidial speculum, ten inches in angle, which revolving freely as the buoy moves, reflects the rays of the sun and moon, and occasionally Calshot light. The reflected flashes of the sun's rays are visible at a distance from seven to eight miles from a vessel's deck, and the "buoy-beacon" itself is seen in clear weather four to five miles off, or three times the distance of ordinary buoys of the largest size, and in thick weather it looms like a small vessel at anchor. The top of the speculum is twelve feet above the water-line.

The commanders of steamers and other vessels frequenting the port of Southampton, and all the pilots, give a unanimously favourable report of this "buoy-beacon," and strongly recommend its general adoption upon all outstanding dangers, particularly the "Warner" at the east-end of the Isle of Wight, and the "Shingles" at the west-end. They say that it rises over the tops of the seas without plunging or diving, or being in the least affected by the action of the tide beyond sheering from side to side within the scope of its mooring chain, during a gale across the tide, and thus rendering itself more conspicuous by presenting two-thirds of its broadside each way alternately, and in heavy gales of wind from the most exposed quarters, namely S.E. and W.S.W. at the strongest period of a spring tide, it is seen to ride upon the crest of waves which completely overwhelm the neighbouring buoys of the Bramble, Leep, &c. It has not been baled or pumped out since it first went into the water, and upon taking off the manhole cover, after it had been laid down six months, it was found to be as tight as a cup. As a proof of its stability two persons at one time have sat on the top of the platform when afloat without its showing any sign of being crank. The cost of this "buoy-beacon," including bells, fittings, &c. &c. was £55.

The buoy proposed for the "Shingles," will be eighteen feet high, the hull being twelve feet by eight by four, and capable of holding twenty persons.

Commanders of Packets and Pilots' Certificates.

We the undersigned, having been in the habit of passing and repassing Captain Peacock's "refuge buoy-beacon," moored off the spit of Calshot Castle, both night and day, and in all weathers during the last seven stormy months have found it of very great utility in facilitating the navigation, and we are of opinion that it is a most excellent and desirable invention. It is visible at three times the distance of ordinary buoys, and appears to ride upon the crest of the heaviest seas without driving or twisting, and in the event of contiguous shipwreck, if brought into general use, would frequently be the means of saving life by affording a temporary asylum to the shipwrecked sufferers, particularly where moored on the edge of outlaying sandbanks which dry at low water. We consider that such a buoy would be highly desirable for the improvement of the navigation of the "Needles," and towards Spithead by St. Helens, if laid down upon the south-west end of the "Shingles and on the Warner."

Given under our hands at Southampton, this 20th day of March, 1852.

David Corke, Sub-Commissioner of Pilotage and Superintendent of South Western and Isle of Wight Steam Packets; George Babot, Commander of the Mail Steam Packet *Dispatch*, from Southampton to the Channel Islands; James Goodridge, Jun., Commander of the Mail Steam-Packet *Courier*, from Southampton to the Channel Islands; David Cooke, Jun., Commander of the Mail Steam Packet *Queen*, from Southampton to Cowes, Ryde, and Portsmouth; John Stephens, Commander of the Mail Steam Packet *Ruby*, from Southampton to Cowes, Ryde, and Portsmouth; Richard Stephens, Master of the Mail Steam Packet *Pearl*, from Southampton to Cowes, Ryde,

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and Portsmouth; WILLIAM CALPINE, Master of the Mail Steam Packet *Duke of Buccleugh* from Southampton to Cowes, Ryde, and Portsmouth; T. BULMORE, Master of *Earl of Malmsbury*, Mail Steam Packet from Southampton to Cowes, Ryde, and Portsmouth; NATHANIEL ROBERTSON, Pilot, Southampton; JOHN HEATHCOT, Pilot, Southampton; WILLIAM SEYMOUR, Pilot, Southampton; ROBERT HURST, Pilot, Southampton; JAMES LEBERN, Pilot, Southampton.

PIRACY IN THE CHINA SEAS.

After the departure of last month's mail to Europe, an expedition, consisting of H.M.S. *Cleopatra*, and the Honourable Company's steamers *Semiramis* and *Pluto*, sailed for the coast of Borneo, to punish the pirates up the Kinibatangan river, concerned in cutting off the trading schooner *Dolphin*, and the murder of Messrs. Burns and Robertson. It is probable this nest of Illanoon and Suloo pirates will be destroyed—a step which ought to have been taken many years since. Two recent instances of vessels being cut off have been brought to our notice within the last few days; in one instance the vessel was cut off by her crew, and in the other by Chinese coolies emigrating to South America.

On January 27th, the English barque *Victory*, belonging to Messrs. Wilson and Cook, of Bermondsey, London, arrived at Singapore, in charge of the chief officer, Mr. Vagg, with intelligence that the master and some of the crew had been foully murdered by the Chinese passengers on board, and that for several weeks they were complete masters of the vessel. It appears the *Victory* left Cum-Sing-Moon with 350 Chinese, the very refuse of the streets of Canton and Hong-Kong. Four days after sailing, and when near Pulo Sapata, whilst Captain Mullens was walking on the poop, at between two and three in the afternoon, he was seized by a party of Chinese, who inflicted a severe wound on his head: he made his way up the rigging, but was overpowered and brutally murdered. The second mate, named Aransolo, endeavoured to rescue the master, and was also murdered, as also the cook and one of the seamen—the latter actually cutting his way from the forecastle to the poop. The crew were chiefly in the forecastle, and were hemmed in by the Chinese. The chief mate was aloft, looking out for the land; he was motioned to descend on deck, and commanded to sail the vessel for the nearest land. By this time the mutineers had possessed themselves of the arm-chest, and were complete masters of the ship. The ringleaders took possession of the cabins, and did whatsoever they pleased. A portion of the Chinese landed at Pulo Ohi, a small island at the entrance of the Gulf of Siam, taking with them plunder from the vessel. Many fights took place among the mutineers themselves, arising out of their gambling transactions on board, and several were killed; others who were obnoxious were thrown overboard alive. The ringleader, Ah-mang, a desperate character, and the winner of the principal stakes, was tied hands and feet, cut at with cutlasses, and thrown into the sea. Every day the European crew were apprehensive that their lives would be taken; and on one occasion they all quitted the ship, under pretence of capturing native trading vessels for the Chinese, but after being absent eight days, with scarcely any food or water, and being repulsed wherever they attempted to land, they returned to their vessel, and navigated her along the coast of Cambodia, where the remainder of the Chinese were landed. On one occasion some of the Chinese attempted to destroy the vessel by firing her. The *Victory* is the fourth vessel bound to

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South America, which has been cut off by Chinese coolies proceeding as passengers. These frequent occurrences ought to teach those engaged in the cooley trade a lesson; indeed, it is high time the English government interdicted a traffic but one shade removed from the horrors of the slave trade.

The circumstances attending the next case are far more revolting, involving the total loss of the vessel, and the murder of all the Europeans on board. In this case the parties implicated are in safe custody in Her Majesty's gaol, having been brought on here by the Dutch steamer a few days ago. The fact of a vessel having been cut off by her crew near the Straits of Sunda was known here a month or two ago, but the name of the vessel *(Ariel,)* and other circumstances, induced most persons to believe that it was mere rumour. From the confessions of the prisoners, made before the Dutch authorities at Batavia, we glean the following particulars:—

The English barque *Herald*, Captain Lawson, left Shanghae, August 26th, with a valuable cargo of teas, silk, &c. for Leith, with a crew consisting of European, Portuguese, and Manila-men. The *Herald* passed through the Straits of Sunda on October 22nd, and three or four days afterwards the mutiny broke out. During the chief mate's watch at night he was seized, murdered, and thrown overboard; the second mate and carpenter shared the same fate, weights being secured to the feet to prevent the bodies rising from the deep. The captain, with his wife, was asleep below; one of the crew, with a hatchet, went down and despatched him, and Mrs. Lawson, poor creature, after giving up every little article of value to induce the villains to spare her life, was most brutally violated, and, under the cruel treatment to which she was subjected, became deranged. The gunner took command of the vessel, which was then about 100 miles from the coast. At daylight an awful scene of slaughter was disclosed, but their appetites for blood were not appeased. Some five or six days elapsed when the steward and the Bengalee servants were butchered. The villains now resolved to reach the coast in the boats. After removing from the ship all small articles of value they scuttled her, and in the dead of night she went down. Mrs. Lawson begged the wretches to spare her life, but in vain; they confined her in one of the cabins, and she was carried down with the vessel. The long-boat, containing the whole of the mutineers, reached the coast of Bantam, where they landed with the plunder taken from the vessel.

On being interrogated by the Dutch Resident, their account of the loss of a Spanish vessel, to which they alleged they belonged, and the fact of their having so much baggage, excited the Resident's suspicions. After a short time three of the number, who said they acted from compulsion and not choice, confessed that they had cut off the vessel and murdered those on board. The Resident then sent them in close custody to Batavia, from whence they were sent on here, and the whole sixteen are now lodged in her Majesty's gaol awaiting trial. Before the Resident of Bantam the crew stated that they had been induced to commit these sad outrages in consequence of their being deceived as to the nature of the voyage. They allege that they shipped in San Francisco on board the *Herald* for China or India; that the ship loaded at Shanghae, as they understood, for Calcutta; that after getting through the Straits of Sunda, and finding that the *Herald* was proceeding to Europe, they determined to seize the ship, and to reach the nearest shore.

On their examination at Batavia, another story appears to have been set up, in which they allege that they were insufficiently supplied with food five days after leaving Shanghae; that, aided by the Portuguese abovementioned, they endeavoured to get rid of the captain and his officers by poison, but that the quantity of poisoning matter mixed with pounded sugar candy, to sweeten the tea, was not sufficient to cause more than temporary sickness.

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On Lowering Boats.—*Berthon's Method: with a Plan.*

Several plans have been proposed since the destruction of the *Amazon*, to prevent the dangers that arise from lowering boats improperly. In the present number we present a design by the inventor of the Fareham life-boat, for this purpose a description having been inserted in our last, but the engraving omitted.

Fig 4.—A A, represents a position of a ships' bulwarks inside. D D, the davits.

R, is a large two-grooved reel shown in profile, in fig. 5.

S' is a flat iron stancheon which supports the reel.

CCC is a friction strap like those of common cranes. L the lever acted upon by the spiral spring P.

The boat is hoisted in the usual way and then suspended by a single fall on each davit—which has been previously wound round the reel by means of a small winch.

The opening P is strong enough to prevent motion of the reel (by its friction) when the weight of the boat is on it.

One hand lowers the boat simply by raising the lever, pulling up against the spring—both falls run off exactly together.

Nautical Notices.

Report of Professor A. D. Bache, Superintendent of the Coast Survey, to the Secretary of the Treasury, in relation to the latitude and longitude of Point Pinos, California.

Coast Survey Office, February 4th, 1852.

Sir.—I have the honor to state that the longitude of Point Pinos, near Monterey, California, as computed from the observations of George Davidson, Esq., Assistant Coast Survey, is 120° 54′ 00.″30.

The latitude of Point Pinos (36° 37′ 59″9) was published November 11, 1851.

I would respectfully request authority to publish the above.

Very respectfully,

(Signed) A. D. Bache, *Superintendent.*

Office of the Craysfort Reef Light-House,
Key West, February 14th.

Notice is hereby given that on and after the 10th of March proximo, a fixed light of 18 21-inch reflectors, will be exhibited in the structure recently erected on the Carysfort Reef, Gulf of Florida. The light is elevated 106 feet above the water and will be visible in clear weather, from a deck twelve feet high, at a distance of eighteen miles. This structure can be approached from the eastward within a quarter of a mile, being erected on the most seaward bank or reef, distant about four miles from the light-ship, as laid down in the charts, and bearing from it E.N.E. (magnetic).

(Signed) Geo. G. Meade, *Lieutenant,*
Topgl-Engineers.

Documents with which passengers should be furnished from port of shipment, to avoid delay at Elsinore. Two sets of bills of lading, when bound to

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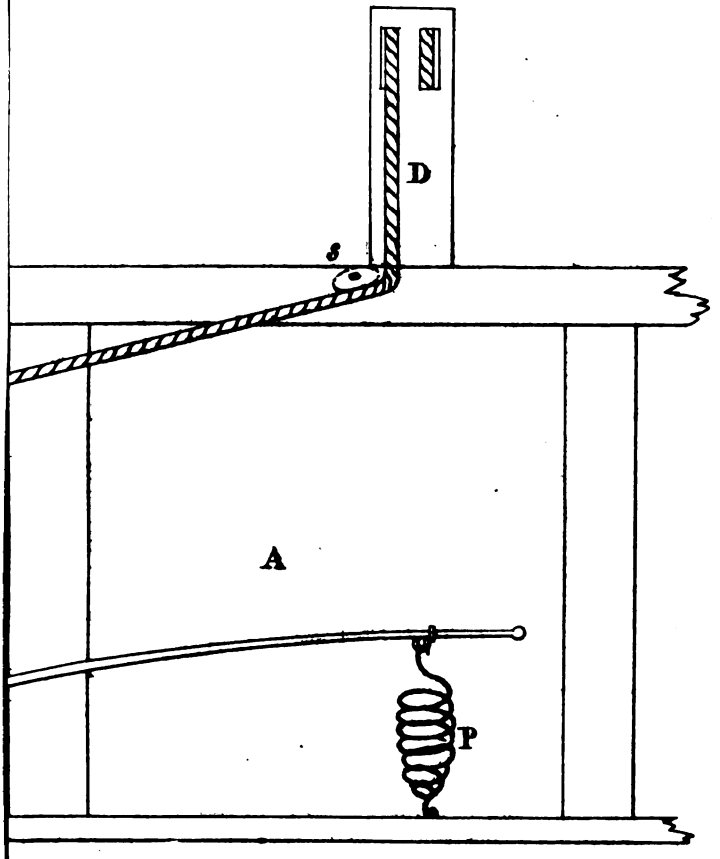
BOATS



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Russia, and whenever the same contain any marks or numbers in the margin, the master of the vessel should sign his name under the same, as well as in the usual place.

From the United States of America. Bill of registry, manifest, and bill of lading; when laden with cotton for Russia, the master should be supplied with a certificate, authenticated by the Danish Consul, setting forth that such cotton is the growth of the United States, or, if it be Brazilian or other cotton, it should be stated that it has been duly landed in a port of the United States, and not shipped direct from a vessel from a foreign port.

H. T. A. Rainals, *U.S. Consul.*

Can Buoys.—The Can Buoys, recently carried away from their moorings in Gedney's Channel, have been replaced with Spar Buoys, painted white and black perpendicular stripe.

Lisbon, Jan. 24th.

In consequence of a complaint made, the Director of Lighthouses has issued positive orders that henceforward the lights are to be lit without fail at sunset, at all seasons of the year. That in the case of thick weather they are to be lit earlier, according to the judgment of the light-keeper. And further, that on foggy days they are to be kept permanently burning, as if it were night.

West Capel Light.—The Dutch Government is contemplating an alteration of the West Capel Light, in the month of May next, of which due notice is promised: and the Hydrographic office recommends ships not to approach the Texel, in passing it, to nearer than three or four leagues, or in 16 to 18 fathoms to avoid some shoals which dry to the northward of it.

Brazilian Consulate-General, Liverpool, March 17th, 1852.

Lighthouse on the Ponta da Atalaia, Province of Para.—Sir.—I am directed by the Brazilian Government to make public for the information of all parties whom it may concern, that a lighthouse, of which I beg to hand you the particulars, has recently been erected on the Ponta da Atalaia, in the Salinas, Province of Para, in the empire of Brazil, and that the said lighthouse was intended to be in operation on and after the 15th of February last.

J. M. Braga, *Vice-Consul, Acting Consul-General.*

Captain G. A. Halsted, R.N., Secretary, Lloyds.

Particulars of the lighthouse recently erected on the Ponta da Atalaia, in the Salinas, Province of Para, empire of Brazil, in lat. 34° S., long. 33° 32′ of the meridian of the Ilha do Ferro.

The light is visible at seventeen miles distance, is varied, and presents the following phases:—

Bright white light during seventy seconds; eclipse of obscurity during sixteen seconds; increasing and brilliant light, gradually diminishing until it disappears, twelve seconds; another eclipse, twenty-two seconds.—Total 120 seconds.

The phases succeed each other at intervals of two minutes.

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Revolving Light on the South Point of Barbados.

Notice is hereby given, that Her Majesty's Government has established a Revolving Light on the South Point of the Island of Barbados; and that it was to be displayed on the first of this month.

The base of the Tower is fifty-five feet above the Sea, from which it is 200 yards distant, and stands in lat. 13° 2′ 45″ N., and long. 59° 33′ 30″ W. of Greenwich. The Tower is ninety feet high, and is painted in alternate red and white bands, each being seven feet and a half in depth.

The light is thus 145 feet above the level of the sea, and revolves once in every minute; but after an interval of fourteen seconds of darkness, it again appears, gradually increases for twenty-four seconds to its greatest brilliancy, and then in twenty-four seconds more is eclipsed.

From the Light, Seawell Point bears about N.E.b.E. ½ E., and Needham Point W.N.W. ½ W.; and except from between the opposite bearings the Light is visible in all directions from the deck of a vessel within the distance of eighteen miles.

Vessels approaching the island from the eastward are recommended not to run down their long. to the northward of 12° 55′ N.; and as soon as the Light is discovered to bring it to bear west; steering from thence W.b.S. and not passing it nearer than two miles.

If coming from the north-eastward the Light will not be visible until it bears to the westward of S.W.b.W., being concealed by the high land forming Seawell Point; and if kept in sight well open of that point, it will lead clear of the Cobblers, a group of dangerous reefs which extend some miles from the eastern side of the island. Mariners are, however, advised to give them a wide berth, on account of the prevailing current to the westward.

When the Light is brought to bear north-east, a course may be taken for Needham Point, which may be passed at the distance of a third of a mile, when hauling up into Carlisle Bay.

Meritorious Services in Cases of Shipwreck Rewarded.—A meeting of the General Committee of the Royal National Institution, for the Preservation of Life from Shipwreck, has been held at the offices in the Adelphi. The chair was taken by Mr. Thomas Wilson, late M.P. for London. It was resolved that a life-boat should be placed at the earliest opportunity at Barmouth, on the coast of Merioneth. A reward of eight pounds was granted to a crew of fishermen who had succeeded in rescuing a portion of the crew of the brig *Anna*, of Riga, on the 8th of January, when that vessel was wrecked near Innishowen Lighthouse, on the coast of Derry. A sum of five pounds was voted to the boat's crew who had saved the lives of the whole crew (ten) of the galliot *Avendina*, of Pilkila, in two trips, which was wrecked near Moville, on the coast of Derry, on the 30th January last. A reward of nine pounds five shillings was granted to several persons who had assisted in saving the whole of the crew, six in number, of the schooner *Frindsbury*, wrecked near Aldboro,' on the coast of Suffolk, early on the morning of the 31st of January. The silver medal was voted to be presented to Mr. J. Kearney White, chief Officer of the Coast Guard station at Blyth, in appreciation of his gallant conduct in connection with a boat's crew of fishermen, to whom a reward of four pounds ten shillings was granted, in having saved the lives of the crew of the *William and Mary*, wrecked near that place on the 10th ult. The crew of a pilot boat were rewarded with one pound ten shillings for having saved the lives of three persons from a galley in the Bristol Channel, on the 9th, during a storm. During the month of January last, 150 shipwrecks took place on the shores of the United Kingdom, and the loss of life was proportionately great.

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Late Admiralty Measures

We have heard a great deal of abuse of the Admiralty—the poisoning of the sailors, the "preserved meats," and the breaking down of the *Megæra*. But the thing is now vanishing before the Committee, and we believe the opinion will be that the case originally was not fairly put; but, on the contrary, it will appear that the Admiralty have been doing all in their power to increase the comforts of the sailor and to popularize the service. Here are some measures introduced by the late Board of Admiralty for the benefit of the seamen of the fleet:—

The prize proclamation altered so as to give a larger share of the prize to the seamen.

Extending the benefits to seamen, when paid off from their ships, so as to give them two months' leave of absence, if they choose to remain in the service, and to join any flag ship in England; and if they should not return they would not be considered as deserters, or lose any time of servitude.

The introduction into the service of the good conduct badges, and extra pay of one penny per day to all men of very good conduct, having five years' servitude; two pence per day after ten years, and three pence per day after fifteen years. All persons having the badge not to be liable to corporeal punishment.

Increase of ratings of Petty Officers to the ships of the line and fourth rates, with gratuities for good conduct after three years' servitude to the most exemplary Petty Officers on being paid off.

The price of the clothing issued from Naval Stores, for the benefit of the seamen, reduced; and the duty taken off soap, so as to reduce its price on board all Her Majesty's ships.

Regulations adopted to facilitate the payment of seamen's wages in London, and also facilities given for remittance of their money when paid two months' advance.

Reduction of the allowance of spirits, with a considerable increase to their pay; the establishment of a fixed day pay, increase of salt meat provisions, introduction of mustard and pepper into the service, with other advantages.

In preserved meats, sixteen ounces allowed to the pound, instead of fourteen ounces.

The Petty Officers of Her Majesty's ship *Excellent* directed to inspect the articles of clothing in store at Portsmouth, and to report whether any improvements could be made, or whether they have any wish for improved descriptions, and if so, to forward patterns, &c.

Extension of the regulations for the entry of seamen into the Dockyards, and when absent on duty, provision made for payment of their wages to their families, and other advantages.

Regulations for the examination of all invalids, or seamen, or marines, claiming Pension, at Portsmouth, Plymouth, Chatham, and Woolwich, or in London, as most convenient to the men, so as to render it unnecessary to appear in London as formerly, by which very serious inconvenience and expense to the seaman was incurred.

The establishment of naval apprentices in the service, and their instruction in all the duties of seamen.

A defaulters' book established in all Her Majesty's ships as a check on the secondary punishments inflicted—a measure highly beneficial to the discipline of the navy, and advantageous to the seamen.—*Hants Advertiser.*

H.M. iron steamer *Torch* has been docked for the purpose of being examined after a seven months' trial of Messrs. Peacock and Buchan's Improved Composition. She has not been (we are informed) scrubbed or re-

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touched since the Composition was laid on in the early part of August last, and not a particle of weed or barnacle was found upon any part of her bottom, and scarcely an atom of rust. She is to have three coats more of it laid on preparatory to proceeding as tender to the *Herald* in continuing the survey in the South Pacific. The iron screw steamer *Greenock* was also coated with this Improved Composition last week.

Life Preserver Hat.

9, *Portsea, Place, Connaught Square,*
March 24th, 1852.

Sir.—As a description of my Life Preserver Hat, may be well suited for the pages of your wide spreading magazine, I will endeavour to give it you.

The hat I have made, and propose for the use of life-boat crews, or others on board ship, and in the coast-guard service, is in the first instance, such a hat as a sailor is ordinarily provided with. The life preserver consists of a double air-tight lining, made of prepared Macintosh material. This double lining, the inner part of which is well secured to the crown, is in one piece, but made so that the outer or lower half should turn out of the hat by pulling on a small becket in the centre of the lower crown. The upper crown of it is also fitted with a valve which admits the air into it on this lower part being pulled out.

The position of this lining when in use for life preserving purposes, I think will be best described by the annexed sketch.* It will thus be seen that an air cylinder is obtained in solid content, equal to twice the size of the hat, ready at the hand of a man should he fall overboard with such a hat: it is moreover a useful article for look-out men on boards hip who commonly are the first to see passing by them any poor fellow who has missed his hold and is struggling to catch at anything near him in the water.

The life-buoy is too often let go in a hurry before the man is near it, or when he is so far astern that it is impossible for him to reach it if he be not a tolerable swimmer. Should this be deemed by you sufficiently explicit, I hope it may, through the agency of your well known Magazine, be found useful for the purposes I propose to some of your readers.

I am, &c.

E. A. Inglefield, *Commander, R.N.*

[The idea is a happy one, and cannot but be followed up with advantage. —Ed.]

Progress of Sailors' Homes

It in highly gratifying and satisfactory to learn from many of the out-posts, naval as well as mercantile, the steady progress of those excellent Institions, "Sailors' Homes."

At Bristol, Captain Hall informs us that they have purchased a large house

* Our Artist has not supplied us with the engraving of the hat; but the deficiency can be supplied by the reader, who can imagine an air tight lining of Gutta Percha to it, which can be pulled out as much below the rim of the hat as the crown is above it.—Ed.

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in Queen's Square, and from the liberal subscriptions of those, who have the welfare of our sailors at heart, no doubt a Home in that important commercial city will soon be opened, and prove a blessing and comfort to many poor fellows who would otherwise be at the mercy of those abominable crimps, who use every artifice to get the seamen to their houses, which are of the lowest description; and where many a sailor is robbed of his money and clothes before he leaves the place.

It is to protect them from these designing persons, and to offer them at least a comfortable and respectable retreat from such dangers and temptations, that the Home at Bristol is about to be established.

Portsmouth Sailors' Home.

The additional seventeen Cabins that have been fitted up at the expense of the gallant Captain of Her Majesty's Yacht, Lord Adolphus Fitzclarence are all occupied already, and in a few days when so many men will be on shore, they say on fourteen days leave of absence, the Home, will prove much too small—and as a proof (if any proof is wanting), last night all the berths were taken, and *seventy additional men* slept on the floor of the day hall, ready for the liberty boat, in the morning.—*Sailors' Home, Portsmouth, March* 1852.

Whilst we see reason to hope that the institutions will yet increasingly fulfil their original design, in promoting the religious, moral, intellectual, and professional welfare of seamen, we would conclude in language, abridged from an earnest pamphlet recently published by Montague Gore, Esq.

"Would you judge the real worth of the sailor? See him, when the tempest howls around our own peaceful dwellings, and we are in security, reaping enjoyment and advantage from those products of other lands which he has been the instrument of conveying to ours. See him—not in the harbour, nor in the sunshine, but in the wintry night, on distant seas, buffeting with the hurricane and weathering the storm, that he may procure for us the comforts that contribute to our happiness. See him again defending our commerce, upholding the honour of our flag in every clime. Read the records of his courage and patriotism. Remember the triumphs of the Nile, Trafalgar, and our other naval victories achieved (under Providence) by his heroism, and then I put the question to every reader—will he, can he, hesitate to assist in providing comfortable homes for those who thus contribute to our enjoyment in peace—to our security in war? Exalt the character of the seaman, and with his improvement you raise the reputation of your country and benefit all classes of the community."

New Books.

Rudimentary Magnetism—*being a concise exposition of the General Principles of Magnetical Science, and the purposes to which it has been applied, by Sir W. Snow Harris, F.R.S., &c.*—Weale, London.

The previous volume of this little work, contains an elucidation of the principles of common Magnetism, its ordinary phenomena of the action of Magnets on iron and on each other, and the elementary relation of common Magnetism with voltaic and ordinary electricity: also a general account of various magnetic instruments and manipulations.

In the volume before us, these principles are applied to the investigation of the laws of Magnetic force, and the great natural phenomena presented in the magnetic condition of the globe of our earth, and finally to the great practical

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benefits resulting to mankind from the due cultivation of this branch of science: such as the mariner's compass, the magnetic and electric telegraph, &c. This investigation has been very properly treated, in such a way as to benefit the university as well as the general student, and give him clear ideas of the mathematical elements of his research.

The principal experiments of the philosophers of former days have been systematically arranged in an examination of their original papers. Lambert's researches for instance, although frequently alluded to have never before been set forth in any English work that we know of. The phenomena of Terrestrial Magnetism, and the general state of the question of the earth's Magnetism, with the several theories are brought down to the latest investigations, including all that Faraday has arrived at concerning it, besides much novel and interesting matter. We then have a chapter on the mariners' compass most valuable to seamen in all parts of the world, inasmuch as it places them in possession of all the information and practical details requisite to their interests, bearing on the mariner's compass—its variations, corrections, construction and general use. Indeed, the importance of such a work as this to seamen, will account for this extended notice, as from its nature and comprehensive character, as well as its practical tendency, it ought to be popular among them; for the two volumes contain in a small space, almost every thing relative to common Magnetism and its connection with electricity, which so much concerns them.

HINTS AND ADVICE TO THE JUNIOR OFFICERS OF HER MAJESTY'S NAVY—*with occasional Remarks and Suggestions for the impartial consideration of their superiors.—By the Rev. R. M. Inskip, F.R.G.S.*—Routledge, London.

THE title of this little book will at once gain for it that attention which a perusal of its contents will secure. Mr. Inskip, who as a naval instructor of high character, has had ample opportunity for observing the wayward habits of those young officers to whom England looks as her future defenders, adopts the part of their real friend in offering them these hints and words of advice. He holds up to them the admirable letter of advice from Lord Collingwood, written above half a century ago, and enlarges on the principles which it advocates throughout the duties and conduct of a young officer.

Mr. Inskip's labours are admirably directed to benefit the service, and raise the character of its younger branches by encouraging the well disposed when under discouraging circumstances, and pointing out to their companions who have taken the other line in the service, the evil consequences which must result to them. We cordially recommend this little book, not only to the junior officer himself, but also to parents who are for sending their boys to sea.

THE ARTILLERIST'S MANUAL AND BRITISH SOLDIER'S COMPENDIUM.—*By Captain F. A. Griffiths, R.F.P, Royal Artillery.*—Allen and Co., London.

FULL of useful and instructive matter essentially for the artillery officer, but from which the naval gunnery officer may glean some useful hints which may prove valuable should his professional service call him as it frequently does, into field operations against an enemy. There is also a collection of general hints at the conclusion of the volume that should be in the possession of all naval officers.

DARIEN.—*The following Extract from a Pamphlet on the various plans for crossing the Isthmus of Darien will interest our readers.*

THE manifest aspirations of the whole commercial world for improved means of communication across the Isthmus separating the Atlantic and Pacific Oceans, have imparted a new interest as well as a new value to privileges of transit,

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mining and colonization conceded by its governments. England and the United States have been foremost in their anxiety for the success of such enterprizes; and have even made it a subject of international treaty to secure the free exercise of any right of way which may be granted by the local authorities on the Isthmus to their respective subjects, for the indiscriminate benefit of all nations. Thus under the guarantee of two of the most powerful nations of the world, individual enterprize directed towards this quarter, is amply secured against all dangers, whilst the rich resources of the country to be traversed cannot fail to insure the most prosperous results to those who shall establish a communication between the Atlantic and Pacific at a point the most accessible, and at the same time the most healthy.

At the present moment these lines of communication have been commenced upon, to connect the Atlantic and Pacific Oceans, all of them by companies formed in the United States, and which promise more or less profits to those interested therein, so soon as they shall be completed for travel. Those routes are known as the Tehuantepec, San Juan de Nicaragua, and the Panama lines.

According to the best information to be gathered on the subject, the first of these projected lines has obstacles of a local character to encounter almost insurmountable, or which can only be vanquished by a vast outlay of means should the Government of Mexico permit the enterprize to be carried through, which is very problematical.

The San Juan de Nicaragua line, now partially open, can never be a formidable rival, the changes necessary from a land conveyance to water carriage on the lake, and subsequent necessity for canoes to descend the rapids and rivers which lie in the course of this line, are found to be almost unsupportable for passengers, and can never be expected to compete in the transmission of merchandize.

The other projected line, viâ Chagres to Panama, is found to be practically inconvenient, from the insecurity of its harbour on the Atlantic, its fatal climate, and swampy nature of the country, which has only enabled those engaged thereon, after three years of enormous expenditure and loss of life, to complete the railroad to the extent of less than one sixth of the whole distance yet to be performed to Panama, where a wharf has also to be carried out for the enormous distance of two miles, as the shore there shelves so gradually that the steamers resorting thereto at present, never approach nearer to Panama, rendering the operation of embarking and dis-embarking very inconvenient, tedious and troublesome.

Intermediate, however, between the Nicaragua and Panama routes, another exists which is entirely free from the objections, which, either separately or collectively, attach to the others alluded to, and where almost every facility for opening a road between the two oceans has been bountifully supplied by the hand of nature. The route in question is from Chiriqui Lagoon, or Admiral's Bay on the Atlantic to Chiriqui Bay on the Pacific. It passes through the healthy province of Chiriqui or Fabriga, in New Granada, between the 7° and 9° of north latitude, and 81° 6′ longitude west from Greenwich, being about 280 miles due west from Panama, but distant 540 miles by coast line on the Pacific.

The distance from sea to sea is here about only eighteen leagues, whilst the highest point in the contemplated course above the level of the ocean, does not reach 160 feet.

Admiral's Bay on the Atlantic, and Chiriqui Bay on the Pacific, are both magnificent and safe harbours of easy approach, whilst excellent coal, and in abundance exists in the immediate proximity of each.

A grant or patent in due form for the exclusive right of way at this point, has been granted for the term of sixty years by the Governmect of New Granada and the Provincial authorities of Chiriqui. This valuable patent, together with upwards of 40,000 acres of land, conceded therewith, can now be secured on equitable terms, for an association which may desire to avail itself of the great advantage which it holds out for the profitable employment of capital over any other project of a similar nature.

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New Charts.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry.

	s.	d.
Entrances to the Baltic, 4 sheets, Royal Danish Navy, 1846, each ...	2	6
Lancaster Sound and Barrow Strait, with the recent discoveries of *Captain Austin and Mr. Penny*, 1851	2	6
South America, South-East Coast, Sapitiba and Isle Grande Bays, by *Com. Tatham, R.N., and Mr. Engledue*, 1850	0	6
East Indies, Borneo, North-West Coast, sheets No. 1 to 9, by *Captain Sir Edward Belcher, C.B., and Lieut. Gordon, R.N.*, 1844 to 1848, each ... ... 2s. or	1	6
Ditto Majico-Sima Group, *Captain Sir E. Belcher, C.B., R.N.* 1845	1	6
Ditto Pantai and Buloungan Rivers, *Capt. Sir E. Belcher, C.B., R.N.*, 1845	1	0

Edward Dunsterville, *Master, R.N.*

Hydrographic Office, March 20th, 1851.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory. From the 21st of February, to the 20th of March, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter		Wind. Strength		Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
		In Dec	In Dec	°	°	°	°						
21	S.	30·30	30·32	27	40	23	41	W	W	1	4	b	bcp 4)
22	Su.	30·46	30·52	39	43	33	45	N	NE	2	2	o	bc
23	M.	30·63	30·62	34	41	30	42	NE	NE	4	4	bc	bc
24	Tu.	30·50	30·42	33	40	31	41	NE	NE	5	5	qbc	qbc
25	W.	30·33	30 29	37	41	33	43	NE	NE	5	5	o	qbc
26	Th.	30·34	30·28	38	42	32	43	NE	NE	4	5	op (2)	qo
27	F.	30·12	30 04	38	43	33	43	N	N	2	2	o	bc
28	S.	29·67	29·59	42	47	36	48	NW	NW	2	4	o	bcphrs 3) 4)
29	Su.	29·78	29·84	36	42	33	43	N	N	3	2	bc	bc
1	M.	29·76	29·70	35	47	29	49	W	W	3	4	bc	bc
2	Tu.	29·77	29 83	37	41	35	43	N	N	2	3	o	bc
3	W.	29·96	30·08	32	40	27	41	N	NE	2	4	b	bc
4	Th.	30·36	30 42	30	40	25	41	SE	SE	2	2	b	b
5	F.	30·66	30·72	27	38	21	39	SE	SE	2	1	b	b
6	S.	30·76	30 75	29	42	23	43	NE	NE	2	4	bc	b
7	Su.	30·68	30·64	32	46	26	48	NE	E	3	3	b	b
8	M.	30·54	30 53	42	44	30	48	E	NE	1	3	o	bc
9	Tu.	30·45	30·49	40	48	35	50	NE	NE	3	3	bc	o
10	W.	30·38	30·38	38	43	33	45	NE	NE	2	2	o	bc
11	Th.	30·28	30·20	37	43	32	44	N	N	3	4	of	og
12	F.	30·34	30·34	40	45	36	46	NE	NE	3	2	bc	bc
13	S.	30·38	30 40	40	45	33	46	NE	NE	3	3	op (2)	bc
14	Su.	30·45	30·43	37	44	33	45	NE	NE	3	3	o	o
15	M.	30·45	30·45	36	44	29	45	E	NE	2	3	bcf	bc
16	Tu.	30·40	30·38	45	46	38	48	NE	NE	4	4	o	og
17	W.	30·34	30·31	43	48	37	49	NE	NE	2	2	o	o
18	Th.	30·25	30·21	41	43	33	44	E	NE	3	3	o	o
19	F.	30·17	30·15	40	46	32	47	E	E	3	4	bc	bc
20	S.	30·12	30 12	37	50	29	51	E	SE	3	4	b	b

February 1852.—Mean height of the barometer = 29·989 inches; mean temperature = 40·1 degrees; depth of rain fallen = 1·16 inches.

Hunt & Son, Printers, 6, New Church Street, Edgware Road.

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THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

MAY, 1852.

Suggestions for Manning the Navy with Volunteer Seamen.—*By Captain W. L. Sheringham, R.N.*

A conviction of the importance of devising some sound and practical plan for manning the Royal Navy, and raising a constant supply of seamen proportionate to the demand, has drawn from many quarters, particularly from professional men, various schemes and suggestions; and it is only bare justice to acknowledge that many of them are well worthy of consideration.

One of these appeared in a pamphlet from a very intelligent young captain, in the year 1847, and attracted more than ordinary attention; and I was induced at the request of an old and valuable officer, now no more, to comment on it in writing. By a mere accident my remarks fell into the hands of the senior naval Lord of the Admiralty, and afterwards into those of the first Lord and first Secretary, in the month of January, 1848.

The substance of that paper will be found in the course of the following, and is here alluded to, as being introductory to the important subject before us. The pamphlet alluded to recommended:—

1st. A reserve of 5,000 men over and above the number then employed in the navy.

2nd. The enrolment of so large a body of seamen, at the mercantile ports to be called "Naval Militia," as would at any moment insure a supply of 15,000 men, &c.

3rd. An improvement in the state of our seamen by increase of

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wages, and a radical change in the condition and constitution of the petty officers class.

Lastly. Keeping up a constant change of men on board of our ships by an annual shift or draft of one-fifth part of the crew.

Of the necessity for organizing a reserve of seamen, I apprehend no one can entertain any reasonable doubt, and it is to be regretted that neither the author nor any one else, as far as I know, has pointed out how so large a body of men should be employed when in "reserve," so as not only to be available when required, but also the least possible expense to the State.

The opinion which I then expressed, (and which I have since found no reason for altering,) was as follows, viz.

1. That a large proportion of our naval officers under a certain rank, and a considerable number of men should constantly be attached to our advance and reserve ships as the incipient organization of a considerable fleet;—in fact that we should not only have reserved ships, but reserved officers, and reserved seamen.

2. In addition to the service of the ordinary, which might with advantage be performed by a part of the reserve force, all *dockyard duty whether as riggers* or such other labour as could with propriety be imposed upon our sailors should devolve upon them, and that the reserve should in all respects be under the immediate orders of the superintendents;* most of our young officers might be appointed to the reserve ships, to the steam factories, or to the college.

3. On paying off, each officer might be granted a long leave of absence, at the expiration of which he should join the reserve.

4. The men also, as at present, should receive a similar indulgence of leave, and at its expiration, be invited to enter the "reserve," to replace those drafted into newly commissioned ships.

5. The anxiety with which our officers voluntarily flock to the college and steam establishments, for the laudable purpose of instruction, would lead to the belief that the reserve service would not be unpopular.

Active and intelligent young men would surely be glad of the opportunity of increasing their professional knowledge, and acquiring those scientific attainments, which from time to time would be so usefully applied when called into active service.

I say it not offensively, but it is lamentable to observe, how unfit many of us are for the high and responsible office we fill—not from any distaste for the service or culpable indolence, but really from a long absence from all professional pursuits. But let us return again to the seamen.

6. After all that has been said and written, tending to increase the prejudice against impressment, we can scarcely expect to be able to rely upon it, as an advisable mode for manning the navy; although beyond a doubt, if all others fail it must be resorted to as a *pis-aller*. Hence the

* The seamen riggers were established by the Admiralty on May 28th, 1848. I find by a recent regulation, warrant officers, engineers, and stokers, are to be appointed to our reserve steam navy. I trust ere long, that officers of a superior grade will also be appointed, not only to the reserve steamers, but to advance ships in general.

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objection for depending on a Naval Militia for seamen, in a case of emergency. It is evident they can only be drafted from thence by a voluntary or forced enlistment; and should the first fail, it would be difficult to apply any milder term to the other than impressment, and I apprehend under aggravated circumstances, inasmuch, that every enrolled man would be kept in a state of anxious excitement, from the conviction that *bon gré mal gré* being a militia man, he might be called upon to serve at a week's notice.

I am not amongst those who anticipate insurmountable difficulties in procuring men for our ships in the hour of need. It may be true that the country will have to make some sacrifice to obtain them, for it is but reasonable to suppose that men in all conditions of life, consider their own interests paramount to every other.

7. I know the happiest results are anticipated from a large entry of apprentice boys into the service, the premium of which is to be certain length of servitude.

With great deference for an opinion coming from high authority in naval matters, I entertain considerable doubt of the perfect success of this experiment. Not however to be misunderstood, I must add that I would by all means encourage the introduction of fine lads into the navy as a measure of great importance; but my meaning is, we must not place too much reliance on these apprentices for a supply of sailors. Let us take care that we are not raising seamen at great cost for the merchant service or the foreigner, instead of encouraging the merchant service to rear them for us. If we take into consideration all the casualties they are liable to, death, sickness, crime, incompetence and desertion, I am afraid our loss will be great before they become valuable servants to the State.

No fact is more conclusive to my mind, than that it is to the merchant service, we must look for a useful and hardy race of sailors. From boys they are accustomed to endure privations and hardships, and taught to turn their hands to every part of a seaman's duty. I am persuaded that a thorough sailor, I care not from whence he comes, will in a well disciplined ship, make a good man-of-war's man in six months.

There is good ground for the belief that the royal navy is daily becoming more popular amongst sea-faring men, although it must be admitted there are strong prejudices yet to be overcome; but they are fast disappearing, as I know from experience; indeed it can scarcely be otherwise, when the fact of the laudable and anxious exertions the Admiralty is making for the seaman's amelioration is becoming notorious in every port in the kingdom.

It is inconceivable how much depends upon commanding officers in attaching men to the naval service. I am convinced that it is more from petty annoyance and irritating punishments than from a certain and severe visitation for crime, that disgust and discontent arise amongst our sailors.

8. It is hinted that an increase of pay will be given to the men according to length of service, of course accompanied by good conduct. If such be the case, I firmly believe that it will prove a most successful cast for

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nothing can work with better effect on the human mind than the anticipation of solid advantages within reasonable reach.*

9. In addition to the above a *liberal pecuniary* allowance in lieu of spirits would be a measure acceptable to the men, and more likely to induce them to forego that pernicious indulgence, than a mere exchange of tea, &c.; but still they might be allowed, nay, even encouraged to substitute a proportion of those articles, and they should have the option of receiving the equivalent either in money, or kind, or both.†

10. The condition of the petty officers should certainly be improved by an increase of pay and pension, together, with certain immunities not hitherto granted.‡ With such an improvement in the condition of this useful class, it is natural to suppose that there would be a corresponding anxiety on the part of the men for promotion. It should be therefore, the most anxious study of every commanding officer to promote able and deserving men only to a position of such importance.

11. My next step I am aware, is on tender ground, but I take it in the full confidence that, no good and patriotic officer will begrudge a small sacrifice to promote so desirable an end, as a certain supply of good men for our navy. In a word I would recast the division of prize money and assign a larger proportion to the petty officers and men.§

12. I submit with some confidence the following proposition as an inducement for merchant seamen to enter the royal navy.

Volunteers for the navy from the merchant service, should be allowed to count time served in the merchant service, in the proportion of two years for one, towards servitude for a pension, under the following restrictions.

1. No man to be allowed to reckon more than five years from the merchant service.

2. He must have served an apprenticeship to the sea, except under particular circumstances, half of which should be in a square-rigged vessel.

3. The time towards a pension not to commence until his apprenticeship has been completed, or until he has attained the age of nineteen years.

For instance—suppose a merchant seaman to enter the navy at thirty years of age, having been eleven years at sea after his apprenticeship had expired, or after he had attained the age of nineteen, he would bring five years servitude with him into the naval service.

Thus at forty-five years of age he would have served the State fifteen years out of twenty, the remaining five years being but a fair equivalent for his experience and education as a seaman.¶

* Carried out by the Admiralty in the shape of good conduct pay.

† See Admiralty regulations on that head, dated 1st Oct., 1850.

‡ An excellent regulation on this head dated Jan. 16th, 1849, is in force, viz: that men entitled to the good conduct badge, are exempt from corporal punishment.

§ An order in council, making provision for a new distribution of prize money came into operation 1st January, 1850.

¶ In the last clause of the Admiralty letter to the Treasury on the subject of manning the navy, dated the 10th February, 1852, the adoption of this suggestion is recommended.

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It is unnecessary to enter further into the subject of my paper of 1847, and therefore I will proceed to throw out such suggestions as might serve as the outline of a plan for forming a naval reserve, the establishment of which, is still a subject of deep and anxious consideration.

Although I have shewn in the course of the preceding observations many useful regulations have been established by the Admiralty tending to improve the condition of the royal naval seaman, very little has been done towards the formation of a reserve force, on which a *sure dependence* can be placed in case of emergency.

That useful body of men organized in our dockyards (the seamen riggers) beyond all doubt will, as far as they go, prove most valuable as a ready draft of efficient seamen in a case of emergency; but it must be evident, to withdraw suddenly this force from their important duties would have the mischievous effect of paralyzing our naval establishments at the very time that their energies would be most required.

I would in passing, make one observation on a very important question, now occupying the public mind arising from a measure recently brought before parliament, viz., the amount of dependance to be placed on the mercantile steam marine, as an auxiliary force for protecting our coasts in the event of a war. I am perfectly aware of the growing strength of this opinion, and it is very far from my intention to underrate its importance, but I must, at the same time with great deference submit that it has its weak points.

There can be nothing offensive in saying that it is most natural that, the great steam companies should be anxious to put their navy in something like an efficient state of self-defence, in the event of an outbreak; and it is equally reasonable to suppose that they would be desirous of relieving themselves as much as possible of the expense; and therefore, they ask the country to help them in doing so.

Now this may be all very well, as far as it goes; but we must not at the same time allow ourselves to be deceived, by supposing for a moment that this force will be available for coast defence in the hour of need. On the contrary, it is my firm belief that, let war come when it may the whole of our mercantile steam marine, will be fully occupied by their own commercial pursuits. And it is not reasonable to expect that merchants should give up their steam navy at the very time that they require them most themselves; and even if they did, they would make but bad men-of-war after all.

Something however, might reasonably be asked of them, and their legitimate use would be this—that they should be expected to put themselves in a state to protect themselves; aye and also, to escort if necessary, their own convoys, being duly chartered and paid for so doing, and every well and efficiently armed steamer might be furnished with a letter of marque within proper restrictions.

Thus indeed would our mercantile steam marine, be rendered a useful auxiliary to the Royal Navy; but beyond this I doubt whether it could be carried with advantage.

With this glance only at a very important question, I will return to

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my subject. The letter before alluded to from the late Board of Admiralty to the Treasury, contains a plan of some merit for raising by voluntary entry, a naval reserve; but as that plan has not yet been finally adopted, and I believe is now under the revision of the present Board, I will presume to point out one or two objections to it, viz:

1st. By the proposed regulations adequate caution is not taken to insure the services of those men who are receiving reserved pay. For as they are to be paid quarterly an unscrupulous man after receiving a year's pay, may as far as I can see, avoid servitude by going abroad; in which case as he is not under martial law, it is not shown how he is to be dealt with: again as it may be expected, there would be a loss by death, sickness, or crime, the plan would in a great measure be both expensive and inoperative.

2nd. In many cases, it would inflict a positive injustice upon the man-of-war's man, who might not take advantage of the Reserve. For example, suppose two first class petty officers to be seeking employment, and both requiring six years to complete their time for a pension.

A enters the Reserve, and B the Navy: A remains two years in Reserve for which he receives £24 in addition to his merchant seamen's wages, and takes one year's time for a pension. A then commences naval service, and at the end of five years, he is discharged with his pension.

B at the expiration of his servitude still requires one year more to complete his time, which I apprehend he must serve on board of a man-of-war; and therefore, the case would stand thus, A two years in Reserve and five years in the Navy with a premium of £24. B, six years in the Navy and no premium.

Again it is stated, when a Reserved man is called out for active service, he shall be liable to be retained for a period not exceeding five years, and at the expiration of that time shall not be liable to compulsory service in the Navy.

If such be the understanding, of course the same exemption must hold good with all seamen, whether drawn from the Reserve or not, or the injustice would be manifest; and if it is so extended a compact is entered into by which no man can be compelled to serve in the Royal Navy for more than five years, thus taking the chance of losing the services of your most efficient seamen.

I submit that there are two considerations which should never be lost sight of, and should always form the basis of any scheme which may be adopted for forming a Naval Reserve.

Firstly. The progressive improvement in the condition of the man by an increasing pay in proportion to length of service with good conduct; and secondly, that the State should in return for such advantages be able as far as possible to insure his faithful and continuous servitude.

There is an Admiralty regulation in force, awarding "good conduct pay," to the men according to length of service, which no doubt is a great boon and wisely conceived; but I would submit according to the present regulation it does not produce all the advantage which might be expected from it. For example, a good man, and the better he is, the more likely you are to lose him, might after receiving two or three years

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"good conduct pay," leave you;—good conduct pay therefore, should as far as possible be, not only a reward for meritorious conduct, but a retaining fee for future services, and I will endeavour to point out how this may be done.

After much consideration, I entertain a strong opinion, that a Naval Reserve should, form a part of the fleet, and that when in Reserve men should be kept in contact with their own officers. To effect this, I am disposed to recommend that Reserve men, if practicable, be employed under the crown.

If we take the Reserve at 5,000 men, which appears to be the number generally agreed upon, I think with no very frightful increase of expense the greater part of them might be employed as follows, viz:—

1st. As seamen riggers in the naval yards.
2nd. In the reserved ships.
3rd. In the Admiralty Surveys.*
4th. In the Coast Guard.
5th. In Naval Transports, &c.
6th. In the Marine Department of the Customs.

Of course these several establishments would have to be increased in order to absorb the Reserve, should it be determined on, and added to afterwards as the Reserve is drawn on for men; but an expense must be incurred under any system. Is it not better to make such an outlay, as far as possible reproductive, by extending the bases of those excellent establishments, and by so doing, insure a large supply of good and disciplined men, at a week's notice.

* The Surveying branch of the Royal Navy, certainly appears to offer a most desirable kind of employment for a portion of our reserved seamen, and with reference to this part of the subject, it might be made the foundation of some very important and valuable measures. We have at present twelve little parties of surveying officers on our coast, viz.—five on the coasts of England, three on those of Scotland, and four on those of Ireland. Were these officers all in vessels such as the little fleet to which Captain Sheringham has alluded, there would be twelve vessels for his 500 men. At present some have vessels and some have not; but none of the men really in them are chargeable to the number of seamen voted for the Royal Navy.

Now, although it might appear that this is a large force to be kept always surveying our shores, there is, nevertheless, ample work for its employment. First, we know, that owing to currents and gales there are very important portions of our coasts perpetually undergoing change, rendering a survey after a few years unavailable for navigation, and rather *historically* useful than otherwise. It was only about a year ago that the channels of Yarmouth underwent a complete change, from the effects of severe gales at spring tides, thus rendering an entire new survey necessary. We know also, that the whole body of the Goodwin Sand, has within these last few years changed its position as much as half a mile; also, that in the dangerous navigation of the Bristol Channel, a Sand will be collected so as to shew dry at low water, where but a short time previously there was a depth of forty feet. Innumerable instances of this kind might be pointed out were it necessary on our coast, wherever there are sands and shingle, that we consider should be periodically looked to, and which with other deep water work (the rest of the shores having been carefully surveyed) would form ample employment for our little fleet of surveying ships, with the *reserve* of men assigned to them by Captain Sheringham.

It could scarcely be said that it is the province of the local pilot to look to

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In my opinion it has ever been a subject of regret, that the useful little steam flotilla formerly employed on our home surveys was broken up; for whatever may be said to the contrary, it formed a most desirable reserve of useful vessels, and would employ a body of 500 well trained and efficient seamen to meet any sudden emergency. I am quite sure the Admiralty felt their value during the famine panic in the year 1845, when in two

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the changes which Nature is perpetually effecting on our coasts; for that would imply that we are to remain in constant ignorance of our own shores, and that the charts of last century should be serviceable now. But good charts are popular. The visits of our naval surveyors are desired by the resident proprietors, and their works which are done on a liberal scale are valuable to them, inasmuch as they form the bases of operations for improvements. If we look across the channel, we find our neighbours there fully sensible of the advantages of surveying. We cannot say that they keep up a standing *corps* of surveyors, but the four large volumes of that beautiful work, the *Pilote Française*, throw ours into the shade. Much more might be said on this subject than we can add now, but we have said enough to shew that Captain Sheringham's *Reserve* for the surveying service, might be well and usefully employed.

But as a permanent service established at home, it should also serve as a *School of Practical Maritime Surveying* for those of our naval officers, whose habits and inclinations lead them to such pursuits. A year or two passed by an officer in one of these vessels, would be more worthily employed than on idle half-pay; and when he is serving afterwards abroad, for one should be found in every other ship, he has taken with him a practical knowledge of an important art, which would be most useful on many occasions, whether for actual hostile operations of his ship, or merely for the use of his brother navigators. These home surveying vessels would, moreover, afford ample opportunity for that class of officers which aspire to the important post of master in the Royal Navy, to make themselves thoroughly acquainted not only with Channel Navigation, but also with the pilotage of the various harbours and anchorages on the coasts of *Great Britain and Ireland*, for which they are now compelled to trust to books of navigation, &c. It is a curious fact, that for want of that experience which they ought to have, one of these officers, offering to pass an examination for master in the navy, at the Trinity-House recently, *had never been in the Downs!* And yet on these very officers depend, full often, the safety of our ships.—That they are repeatedly rejected by the examining masters at the Trinity-House, is notorious, but is it fair to blame them for this, when, as at present, they cannot obtain that local knowledge which is expected of them, but which they might obtain by the system here proposed. How many masters are there in the navy who could pilot a line of battle ship through the Owers in a case of emergency? And how many good channel pilots are to be found among them? They may know foreign ports, but surely they should not be wanting in the knowledge of their own.

In fact, Hydrography both at home and abroad, would be prodigiously benefited by this single process in connection with our home surveying force. The commanders of such vessels should only be permanent, and these should be eligible to such stations only after certain foreign service, the pay and emoluments of the surveying officers in them being less than they are entitled to abroad for obvious reasons. Besides the ordinary surveying duties of the commanders, their services would be useful at courts of enquiry, and courts-martial, as in the case of H.M.S. *Vindictive* a few years ago; also reporting on and watching engineering schemes going forward in numerous harbours along our coasts, with the cognizance of the Admiralty as well as without it; and many others of frequent occurrence which we need not stop now to mention.

Yet to such an employment of some of our *Reserve*, an old objection of want of funds might be advanced; and in case it should be, let us ask what the Ordnance survey has cost the country? A paper which appears in our last year's

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days they were enabled to send a small steam fleet well officered and manned to Ireland.*

It is no province of mine to speak of the value of their services when engaged in surveying. The results will answer for themselves hereafter. But the whole commercial world knows, the importance of good charts, and surely the money would be fully as well spent in opening out the Hydrography of the country, when every creek in a war ought and must be the asylum for a gun-boat, as it is in the Ordnance department of the State, in the production of their valuable and beautiful maps.

I will part with the subject therefore, by expressing a hope that we shall soon again see that useful little fleet on the waters of our coast, manned by a part of the Reserve of the British Navy—perfecting their crews as good boats'-men, leads'-men, and helms'-men; in which important part of a seaman's duty they are constantly engaged.

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volume, shews the enormous sum of £1,588,000 up to the year 1850, from its commencement. And it is still going on; nay, its termination is yet unforetold, the present generation will not see it! This year it is to cost the State the sum of £77,800; besides £750 for draftsmen. And the sum of £70,000† is all that is appropriated not only for the expense of our maritime surveys in all parts of the world, but to include also the supply of all Her Majesty's ships afloat with charts, besides the expense of the establishment in which they are prepared at the Admiralty! We need offer no comment on this strange anomaly, of the preference given to the importance of *home maps*, in comparison with *coast surveys every where*, on which it is well known the *safety of our ships and seamen*, which are obliged to visit them, so much depends!! Nor need we stop to illustrate the consequences,—examples are too fresh. The recent deplorable loss of the *Birkenhead* took place on a portion of coast passed and repassed ever since the discovery of the Cape itself, but never yet surveyed so as to be represented correctly on the chart, and yet it might have been readily done by a single surveying officer long ago appointed for that purpose, had this very important measure been in force. Surely then, in justice to our high position as a great maritime state, and with a due consideration for the great responsibility which rests every where on our naval commanders, no unworthy parsimony should be allowed to cramp our energies in dealing with this subject. Surely we should entertain it with more liberality than we have been wont to do, when we can afford to appropriate, without any difficulty, a far greater sum to *home maps* which do not contribute either towards the safety of our fleet, the improvement of maritime geography, the extension of our commerce, or the exalted position which we occupy in the scale of nations; a position which, if we do intend to preserve, must be either fostered with the liberal hand of science in attending to these wants of that fleet, or it must suffer in our apathy by occasional loss.—ED.

*The surveying vessels to which Captain Sheringham alludes were the *Blazer*, *Dasher*, *Firefly*, *Lucifer*, *Porcupine*, and the *Shearwater*. In the autumn of 1846, steam-vessels were urgently required for the conveyance of meal on the coasts of Ireland, and all that could be collected were placed under the orders of Admiral Sir Hugh Pigot, the commander-in-chief at Cork, for the purpose of conveying supplies to parts of the Western Coasts, where most required. In those days, Admiralty surveys on the home stations (as well as those abroad,) were carried on in small steam-vessels, and most valuable were the services rendered by these vessels. Accustomed as their officers were to inshore work, both in boats and ships, and their men well inured to the lead, they performed the relief service most effectually, almost without chart or pilot,

† And a fair portion of this arising from the sale of the charts to the public is repaid to the State.

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The vessels might be fitted and prepared to receive a gun or a mortar, and their crews frequently exercised at small arms.

In the winter the surveying officers might be landed for the purpose of charting their work, and the vessels return to their several ports in readiness to perform the many important services for which they are constantly required.

To continue.—Every young man entering the service should have attained the age of nineteen, whether a naval apprentice or from the merchant service; and if from the latter, not after thirty years of age, half of which time, and after he had attained the age of nineteen, should count towards a pension, provided the whole did not exceed five years.

His first entry should be into the Royal Navy for five years service afloat in one of Her Majesty's ships. But under certain circumstances a government appointment might be given first of *one year* in Reserve, to be followed by five years service afloat, and then again one year in Reserve before the second term of five years service afloat.

The first two years service afloat should be as an ordinary seaman, unless he had been four years in the merchant service; and then if duly qualified he should be rated A.B.

On the completion of five years active service, after a certain leave of absence, the man should be placed in Reserve for two years, either in one of the above establishments, or, should there be no vacancy, to return to the merchant service; in which case he should be allowed a pension of five pounds per annum while in Reserve, *to be paid as a bonus* on his second entrance into active service; but there should be no extra allowance made to those employed under government.

When his reserved time was up, he would be liable to be called upon again to serve on board a man-of-war, and again for five years; with this advantage, that whether he had been employed in a government establishment or not, he should receive in addition to his pay as an A B five pounds per annum, as *long service pay*, and also *one badge*.

At the end of his second servitude, he would be eligible again for the Reserve for the period of two years, and if not employed in a government establishment, entitled to have his pension increased to ten pounds per annum, to be paid as before on his third and last compulsory entry into active service.

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for neither were to be had on most occasions; and their duty was completed without accident or loss, and gained them the approval of their Admiral. But what followed? On the conclusion of this important duty, these vessels in the ensuing year were ordered not to resume their surveying duties, but to return to port and pay off, the officers being directed to carry on their surveys in hired boats, with hired crews. The result of this is that much valuable time has been lost, for there can be no comparison between the advantages of a steam-vessel for sounding over boats or even sailing vessels. The surveys of the coasts, that are so much desired, have in consequence been delayed, and should another such contingency arise, as that which in 1846 required the services of those steam-vessels, they will not be found in the occupation offered by the surveying service, unless indeed they are restored to it under a due impression of the worthiness of their employment, and as auxiliaries to the very important and comparatively inexpensive measures here proposed.—Ed.

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At the expiration of his time in Reserve, he would again be liable to be called on for another five years, receiving ten pounds per annum in addition to his pay and *two badges*, for *long and good service.*

At the end of his third service of five years sea-time, he should if deserving, receive a pension of fifteen pounds per annum with *three badges*, be exempt from further compulsory service in the Royal Navy, and enrolled as a naval pensioner.

Although not subject to compulsory servitude, a naval pensioner might be eligible to serve for an additional five years, but only to receive ten pounds per annum in addition to his pay; and at the end of twenty years active service, his pension should be increased to twenty pounds per annum, the highest granted.

No man should be eligible to serve afloat in the Royal Navy after the age of forty-five, unless by the express permission of the Admiralty.

Every man completing twenty years servitude might be enrolled as a "Naval Veteran," and entitled to wear a medal for long and faithful service.

In the event of being entitled to a medal for action, such medal might be distinguished by the addition of cross swords.

A man invalided from the service after five years active service, in consequence of any wound or hurt contracted in the service, should be allowed a pension according to the nature of his wound and length of service, under the pleasure of the Admiralty.

All men would be subject to lose time if convicted by court-martial of bad conduct; and no man discharged with disgrace should participate in any of the advantages above recited.

All Veterans and Pensioners under the age of sixty should be subject to be called on to serve in Great Britain on all occasions that the militia may be called out, and embodied under the name of Naval Brigade.

The following statement will show the cost of one seaman after fifteen years active service, according to the foregoing scheme:

		£	d.	s.
Age 19 On first entering into the Navy.	2 years ordinary seaman, at £19 15 5	39	10	10
	3 years A B „ £24 6 8	73	0	0
„ 24 When discharged into Reserve.	2 years in Reserve (paid by the department he is serving in)	0	0	0
„ 26 On second entry.	5 years A B at £24 6 8	121	13	4
	Addition of pension at £5 per annum	25	0	0
„ 31 On 2nd discharge into Reserve.	2 years in Reserve (paid by the department he is serving in	0	0	0
„ 33 On 3rd entry into active service.	5 years A B at £24 6 8	121	13	4
	Addition of pension at £10 per annum	50	0	0
		£430	17	6
„ 38 On final discharge from the service.	If not employed under Government while in Reserve	£30	0	0
	Utmost cost to Government for each man in the vote Seaman's Wages	£460	17	0

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Present cost of each man for fifteen years service, with no power to retain his services.

	£	s.	d.
2 years ordinary seaman	39	10	10
13 years A B	316	6	8
10 years good conduct money	45	10	10
	£401	8	4

But the subject of manning the navy, is now fairly taken up, and it is to be hoped something effectual will be accomplished. Perhaps the best mode of securing it, would be to appoint a committee to report on the best scheme to be adopted.

W. L. SHERINGHAM, *Captain, R.N.*

London, April 1st, 1852.

RECOLLECTIONS OF SIX MONTHS IN PUGET SOUND.

H.M.S. *Fisgard*, 42, Captain J. A. Duntze, was despatched from Valparaiso early in the month of January, 1846, for the protection of the Hudson's Bay possessions in Vancouver's Island and Puget Sound; the "boundary question" being then, a matter of serious moment to British interests in that remote quarter of the globe.

The passage to San Blas was not marked by any occurrence of more than ordinary sea voyages, if we may except the making of San Benedicto and Socorro, which former island was found to differ considerably, both in latitude and longitude from the position assigned to it in Raper's Navigation;—a discrepancy, which ships leaving San Blas or Mazatlan, would do well to investigate.

Having on the 12th March, taken on board seven live bullocks, and completed water, we left the miserable village of San Blas, for the more interesting and salubrious Strait of De Fuca. After clearing Cape St. Lucas, we made the best of our way to the northward, and by taking advantage of every slant of wind, we had by the 31st March, attained the lat. of 30° 30′ and long. 124.° As it was the intention of the Captain to try the experiment of keeping the coast in this trip, we now stood in for the land, making the islands of Sta. Rosa, &c. at 8 A.M. of 3rd April. At 6 P.M., broken water was reported, upon which pleasing intelligence we tacked, bottom being attained with 65 fathoms (blue mud). These islands appear barren and chalky. The main was high, but at too great a distance to form any judgment of its nature. On the following day a large tree floated by, and which most probably had been swept out of the Columbia River. We continued to stand off to the westward until the 7th, when we were in lat. 33° 15′ and long. 128° 15.′ The ship was again tacked, and at noon of the 11th, both the North and South Farallones were seen. The weather being hazy, we could not

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obtain a good view of them. The sea was breaking heavily on the northernmost, which appears to consist of four large rocks; one just awash. The high land near San Francisco shewed dimly through the mist. At 6 P.M., tacked ship, and stood off shore. From this time until the 15th, we worked by short boards along the coast of New Albion, having a fierce breeze from north-west, occasionally approaching the sand to within a mile, and which well deserves the name of "Albion." The Pine Forests commenced at this point, and increased in the abundance of their trees, as we made northing. Finding that an inshore track was not likely to expedite our voyage, we stood off shore until the 21st, being then in lat. 39° 30′, and long. 130.° When at the lowest grade of despair, and without a hope of ever weathering Cape Mendocino, the wind became more westerly, and we made considerable progress to the northward. On the 26th it became fair; on the 29th we again made the land, and had a good view of Mount Olympus, which we afterwards saw on the opposite side from Puget Sound. At 5 P.M. the Flattery Rocks were seen, as also Whidby Harbour, which has a wide and bold entrance. Soon afterwards Cape Flattery itself was plainly discernable, with the hills of Vancouver in the distance. It being too late to approach the unknown Strait, we hauled off for the night, during which we experienced a furious gale from the south-east, with a heavy turbulent sea, said to be very common in this locality. At daylight we were in an excellent position for entering the "Old river of the West;" mistaken, in the days of yore for the Columbia.

From this brief outline it will be seen that we occupied a period of seven weeks in making the passage from San Blas to Cape Flattery, having to contend with winds, which without any favourable interval blew from the north-west. On some occasions, scarcely any northing was gained, although a strong working breeze and smooth water prevailed. From these, and other circumstances attending this voyage, there can be no doubt whatever, that the most advantageous method of going from the Gulf of California to Vancouver's Island would be, to steer for the Sandwich Islands, after rounding Cape St. Lucas; and by touching at Byrons Bay, (Owyhee) stock and water could be obtained in abundance. This part of the voyage would usually be accomplished in about twenty to thirty days, and the remaining portion in a fortnight. Indeed, it might be done at an average of thirty-five to forty days: thus combining a saving of time, with the comforts and benefits of giving the ship's company a few good dinners of fresh beef. However, since information gained by experience is preferable to any imaginary speculation, it is not at all to be regretted that we took an inner passage, although many amongst us were greatly disappointed of our anticipated visit to the burning lakes of "Monaroa."

When nearly abreast of Duncan Rock, and about half a mile outside it, the water was observed by the captain to break in a manner similar to the eddy produced by the diving of a whale or large fish; but as it then subsided, no further notice was taken of it. On the arrival of Captain Kellett in the *Herald* at a subsequent period, it was made known to him, and on his survey of the Strait, he found a shoal with 3½

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fathoms existing in the precise spot indicated by this surf: the old charts of the coast having no such place marked on them.

When just rounding Cape Flattery, a canoe containing six Indians and a young girl, paddled off from the shore; and on coming under the stern they asked if we were "Man-a-war ship"? A King George's ship? or a Boston ship? A rope was then thrown to them, which was very cleverly caught by the female "bowman," and although towed at the rate of seven knots, she held it on most firmly. The symmetrical figure of the canoe attracted general admiration.

We could not delay to allow them to come on board, and after an attempt to carry on a conversation by means of nods, winks, and frowns they left us, making directly for the land. The men were wrapped about in pieces of blanket, one being ornamented with a red cap, and the girl sported a sailor's jacket. It was astonishing to see how well they managed the canoe in the sea that was running, and we were afterwards informed that the natives of Cape Flattery, frequently chase and capture the largest whales, having a harpoon very ingeniously made with sharpened mussel shells, which are of a considerable size and thickness.

We had not proceed very far into the Strait, when a sudden and heavy squall threw the ship almost on her broadside; the men being at dinner, sail could not be shortened quick enough; however, as it lasted but for a couple of minutes, no harm was done. Some canoes which were paddling alongside, pushed off immediately that they heard the wind, and kept directly before it until it had passed them, when they returned to the ship: we noticed them practice this same manœuvre on another occasion. During the whole of the day we were employed in working up towards Port Discovery, the land being occasionally hidden from view by dense fogs, although the *sun was frequently visible* whilst at any altitude.

Not being able to obtain an anchorage, and having no chart of the Strait, the ship was kept under easy sail all night. At noon of 30th we were off Point Dungeness, on which we could plainly see the "poles" spoken of by Vancouver, which are used by the natives in spreading their nets to catch wild fowl, during the winter season. After some difficulty in consequence of the lightness of the wind we entered the western channel into Port Discovery, having for our guide a survey made by the officers of the *America*. The flood assisting us we picked up an anchorage in 28 fathoms, being about seven miles from Protection Island.

On the following morning the ship was taken further up this noble harbour, and anchored off the Watering Point; a small stream running down from the woods, enabled us to procure about thirty tons. An opportunity was taken of making up a party to visit Protection Island, which is described in very glowing terms by the circumnavigator. The result of this trip fully justified his description, the centre of the island being a most beautiful lawn, covered with grass of a luxuriant growth, intermingled with "golden cups" and daises, hyacinths and clover. The trees studding its margin were principally fir and sycamore; gooseberry and currant-bushes in abundance, and the wild strawberry plant throwing out its tender runners in every direction. The only bird of

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plumage shot on this excursion was a splendid bittern, measuring six feet from the head to the toes.

We had not been very long in this place before noticing the "flat," heads of the Indians; the process by which this member is so frightfully distorted is well described in Sir E. Belcher's voyage. It is not practised however, by the native women married to the servants of the H. B. Company, who are equally proud in allowing their children to enjoy their "craniums" in the form and shape dictated by nature.

An amusing incident occurred whilst lying here. Some old woman from a neighbouring tribe, had amongst other articles of traffic, brought a goodly assortment of "cats" for barter. Of these animals the Indians are very fond. The Port Discovery people soon commenced a bargain with them. Several kittens were produced, and after being terribly mauled about, and their "points" well discussed, three or four were selected, hauled over to their new owners, and placed underneath a piece of matting. During the time in which the goods were being chosen in return for them, the young creatures crept back unperceived, into their former quarters. The arrangement closed, away went the strangers towards the mouth of the harbour. The purchasers of the cats on wishing to review their property found them missing, and with expressions of distrust and disappointment at once supposed that they had been knowingly abstracted. Chase was immediately given to the canoes and on coming up with them a parley ensued, but some misunderstanding taking place, a fight was contemplated; however, on a third party explaing matters, the kittens were re-examined, well pulled about, and given back to their lawful proprietors.

They also keep a number of native dogs, but which are miserable specimens of the canine race; they never bark, but on the approach of strangers, set up a most lamentable howl.

The chief food upon which these people live consists of mussels, cockles, dried fish, and berries. It is very seldom that they can procure meat of any kind. A deer is occasionally shot, the flesh dried in the sun, and preserved in case of failure in the fishing. Their huts are very poorly constructed; a few skins, or pieces of matting carelessly thrown over some sticks, forms the whole apparatus of house-building. In one or two instances we observed huts built of split plank, which is ingeniously made from the cedar tree. In several detached places in this port, patches of ground were regularly planted with potatoes and fenced in.

The noble forests of pine surrounding this harbour, attract much admiration; the loftiness of these immense trees was also a subject of interest. The pieces for the main yard of the *Collingwood* 80, had been cut from here, and spars sufficient for all the ships in the world might be supplied from this place.

On the 4th of April, a start was made for Fort Victoria, (Vancouver's Island) on the opposite side of the strait. A messenger had been sent across by Mr. Finlayson, the Hudson Bay Company's Agent, and who was useful in shewing the direction of the anchorage. Fort Victoria, the principal settlement in the island, as it existed in 1846, was merely a square piece of ground, surrounded by an enclosure formed with upright

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piles, placed closely together. At each angle was a pigeon house, or small fortification, elevated on the top of the pallisades, and armed with a few carronades. A communication between these was formed by means of a continuous stage, on which the servants were enabled to go the rounds by night in order to keep security against the natives, who on more than one occasion had attacked the Fort.

Inside the square was the residence of the Agent, servants' rooms, shop, and stores, the latter containing a valuable assortment of furs and skins. The ground immediately behind the Fort was in a high state of cultivation, and a dairy containing fifty cows was returning a good profit. In the neighbourhood of Victoria there were about 300 acres of land fit for grazing and agriculture. The "Beavers" prairies were not the least interesting features of the country; these animals having in former times cleared larged spaces of ground by biting round the outside bark of the small trees, and thus destroying them. It was stated that not one animal of this description was known to exist in the whole of Vancouver's Island—the hunters having killed them all. Sheep had at different times been imported from Puget Sound, but there was no keeping them on account of the wolves which infest the adjacent woods.

The best harbour near this settlement is that of "Esquimalt." It was first hastily surveyed by us, and afterwards accurately done by Commander Wood, of the *Pandora*. This will undoubetly become the site of commercial operations on the island being colonized. For any further information as to the resources or description of the harbours on this side the island, or in the Strait of De Fuca, the reader cannot do better than refer to the elaborate charts compiled by Captain Kellett, in the *Herald*, and Commander Wood, above mentioned.

On May 13th we proceeded towards Admiralty inlet, on our way to Nisqually, in Puget Sound, which was the principal station of the Company in this district. We left with a fair wind, but on nearing Point Wilson (Port Tounshend) it fell light, and the ship was anchored; so rapid however, was the tide which sweeps past this place that she brought up with a jerk that carried away the stock of the B. B. In about an hour afterwards, a strong breeze came from north-west, almost approaching to a gale, and the canoes lying near us, paddled away before it to the nearest shore. It soon died away, and we had a lovely evening.

From this spot we had a fine view of Port Tounshend, which is a very spacious harbour. Mount Baker was also in sight, and presented a grand appearance, being covered with snow from the base to the summit.

On the following morning weighed, and stood up the inlet, passing Hood's canal, but were obliged to anchor in a small cove opposite to the entrance of Possession Sound. In the afternoon weighed again, and after sailing about thirty miles, anchored for the night. At daylight made sail, and ran through the Narrows leading to Puget Sound, at a rapid rate. The wind falling light, and the tide commencing to ebb, anchored with the kedge. At four it beginning to flow we stood on and cleared the Narrows, soon coming in sight of Kittson Island. The scenery in this part was most enchanting. About six we discovered a clear space of ground, and seeing a road running over the brow of a hill,

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the ship was brought to in 18 fathoms within 150 yards of the shore: finding that on her swinging to the tide that she touched the ground, shifted berth a little further off, to abreast of a small streamlet, where she was moored in 23 fathoms, at 270 yards from the beach.

In the evening we were visited by Dr. Tolmie, (in charge of Fort Nisqually). He sent the captain and officers two fine sheep, and a bag of excellent potatoes, which was a most welcome present after our long voyage from St. Blas. The fort which was situated in an agreeable site, at about one mile from the anchorage, consisted only of three sides of a square—comprising the agent's house, company's stores, and servants' rooms. A few straggling huts were built along the road leading to it.

The village of Nisqually lies on the beach, at the foot of a hill, the principal feature being a large wooden building used by the company as the-store house for their steamer's spare gear; but was kindly lent to us for the carpenters, who during our stay, built a fine galley and a dingy, besides doing much other useful work.

During the following week, an old fort which had formerly been the residence of the agent was given up to the mariners. They stockaded it anew, repaired the buildings, and constructed two rooms in which their senior officer comfortably located himself. A large flagstaff was cut from the adjoining wood, and erected at the north side of the enclosure, upon which the "Flaunting Flag of Liberty," was frequently displayed.

It being somewhat troublesome to procure a supply of water for the new barracks, the experiment of digging a well was tried, but proved of no avail from the nature of the ground; nothing but a succession of sand and stones, or rather pebbles was found to exist, although a shaft was sunk to some forty feet in depth. Indeed, the whole country in this part of Oregon is of a similar formation, and it would appear as if the land on every side of Puget Sound had at some remote period been submerged.

There are several large lakes or "lagoons" in the hollows about Nisqually, which generally abound with trout and mullet. Many good dishes were provided from one in particular, called "Gordon" lake. The woods and forests are covered with pine, fir, and oak trees; some of the former (the Douglas pine) towering to an enormous height. Wild fowl, partridges, grouse and pigeons innumerable. Deer, bears, wolves and squirrels also, being very plentiful. The "skunk," a species of "pole-cat," was found to frequent the copses; and on one occasion caused much amusement to us, an animal having favoured an "Irish sportsman" with a large dose of its noxious store of defensive liquid, the odour of which defied every artifice to get rid of it.

The "artificers" and "tradesmen" amongst the crew were not allowed to eat the bread of idleness, during our sojourn here. A bake-house, constructed of clay, was built near the fort, in which, after a few slight misfortunes in the shape of sundry cracks and fissures on first heating, many batches of "soft tack" were nicely cooked, thereby allowing our supply of biscuits to remain untouched for the return voyage to California.

(To be concluded in our next.)

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Review of the History and Progress of a system of Permanently Fixed Lightning Conductors for H.M. Ships—from the Year 1820, when first proposed, to the present Year 1852, when fully adopted into the Public Service.—*By Sir W. Snow Harris, F.R.S.*

1. To trace the progress of any important practical application of scientific discovery; to analyze the conflicting circumstances which have at various times embarrassed the pursuit of truth; to concentrate upon physical questions involving the public interest, the experience and induction of a long series of years, must necessarily lead to the development of general facts and principles of great value to any future scientific question affecting the convenience or welfare of society; and at the same time contribute in no small degree to promote the further advance of natural knowledge.

Under these convictions I have been led to attempt within as brief a space as possible a history of the past and present condition of the Royal Navy, in respect of the terrible element of lightning; and to review in a concise way the experimental results of certain scientific principles from which complete security against the destructive effects of this irresistible agency has been eventually derived.

2. If we for a moment revert to the state of this question when it was first proposed to fix capacious conductors of electricity in the masts and throughout the hull of a ship, now twenty-five years since nearly, we find prevailing, especially amongst sailors, very strong prejudices and very unsound views of the nature and operation of the agency of lightning. Every metallic substance was supposed to possess a specific affinity for this terrible element, and hence, by a peculiar kind of attraction to invite or draw down its destructive action upon everything in its vicinity. It was customary at this time to apply wet swabs over the pumps and doors of the magazines with a view to arrest the course of the electric discharge in those directions. With the same view, balls of glass or other non-conductors were sometimes placed at the mast-head, such substances being supposed to repulse the electrical agency. The proposal of Franklin and other philosophers, to parry the electrical discharge by the instrumentality of metallic conductors was generally viewed with the deepest apprehension, and great disputation has ensued, as to the amount of security which such a means could ensure, when compared with the quantity of lightning which by the attractive influence of the conductors might be drawn down upon the ship or building to which they were applied. Another source of danger was supposed to arise from an assumed action called "lateral discharge," that is to say, a discharge of the matter of lightning laterally from a conducting body whilst in the act of transmitting it in a given direction. These and other unsound views of the nature of ordinary electrical action had so retarded the advance of this branch of practical science that for a long series of years the British Navy continued exposed to the most distressing and calamitous damage from the terrible element of lightning.

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3. In the pages of the *Nautical Magazine*, for the year 1843, will be found a history of the effects of lightning on 210 ships of the British Navy, collected after a laborious and patient examination of the official log-books of H.M. ships;—a history which may claim to be considered as a valuable record of the phenomena of electrical storms at sea, and their effects on ships, and must not therefore, be viewed in the light of a mere dry catalogue of ships struck by lightning. Now, although this history does not profess to comprise every ship of the Royal Navy struck and damaged by lightning, but merely such as had been traced in the cumbrous volumes of the log-books deposited in the stores of the Admiralty; yet it furnishes a large induction of facts, quite sufficient to prove the ruinous loss to the country, in men, money, and ships by the agency of lightning. It will be proper to advert here to a few practical deductions derived from a careful analysis of these cases, together, with some others which have been subsequently added, making in all about 220 cases.

4. These cases comprise eighty-seven ships of the line, fifty-five frigates, seventy-eight sloops, and smaller vessels. There were ruined or severely damaged in these cases 164 lower masts, of which 117 or more than two-thirds were lower masts of ships of the line or large frigates: 152 top-masts, also principally of large ships, top-gallant-masts and smaller spars in abundance. Of sixty-four lower masts of ships of the line, forty-eight or about three-fourths were ruined as masts and were replaced by new ones. Between the years 1810 and 1815, we find records of no less than thirty-five sail of the line, and from thirty to forty frigates and smaller vessels, either severely damaged or placed *hors de combat* by lightning. Considering the high price of spars, more especially at the period of the last war, their supply to ships on foreign stations, the rigging destroyed, detention and refit of the ships, &c., we cannot but necessarily conclude that the cost to the country upon the whole navy, must have been from time to time something enormous.* Besides that upon these cases, full 300 seamen either lost their lives, or being severely hurt, came upon the Treasury for pensions.

5. In about forty of these 220 instances, that is between one-fifth and one-sixth of the whole number, the ships were set on fire in some part of the masts, sails, or rigging. In about seventy or one-third of the cases some of the crew were either killed, or wounded, or hurt, being struck down on the decks, twenty and thirty at a time. Moreover, the loss in services of our ships at critical periods of our history was such as to place the great interests of the nation occasionally in some considerable peril. In the case of the meeting of our fleet, under Admiral Sir R. Calder, with the combined fleets of France and Spain in 1805, off Cape Finisterre, the *Glory* of ninety-eight guns had been just disabled by lightning, all the carpenters of the fleet were more or less employed in the repairs and refit. In 1813, nearly one half of the inshore squadron, under Lord Exmouth, on the blockade of Toulon, were on one occasion struck at the same time by lightning, and more or less disabled.

* See Report—Shipwrecks by Lightning, February, 1840, p. 15.

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There are at least twenty most remarkable instances of such occurrences. The *Guerriere* for example, went into action with her main-mast in a crippled state by lightning.* Taking all this into consideration, it became imperative upon the Admiralty to seek at the hands of the scientific men of the country some adequate and practical defence against such terrible casualties.

6. After an elaborate investigation of this question both experimentally, and by a large induction of facts derived from the observed effects of lightning on ships as recorded in the official journals of the Navy, the author of this paper was led to discard the prevailing views and opinions relative to the nature of lightning and the general operation of atmospheric electrical discharge, and to consider the whole question as based upon far more practical and general principles than those commonly entertained. Without stopping to consider whether electrical phenomena were derived from the operation of an invisible fluid or fluids always present to us, and attractable or attracted by certain kinds of matter, he came at once to the immediate results of experience, and merely assumed in conformity with these results, that what we call lightning is an explosive form of action of some unknown natural agency, when forcing its way through bodies or other matter, the constitution of which is such as to resist its progress. For example, such matter as atmospheric air or such bodies as glass, pitch, wood, and many others;—that when falling upon other kinds of matter, such as the metals and some other bodies, the constitution of which is favourable to the progress of the electrical agency, then this explosive form of action termed lightning no longer obtains, but is converted as it were into a comparatively quiescent current, the amount of explosive or expansive force being always in some direct ratio of the resistance;—that the great law which determined the path of a stroke of lightning and its attendant destructive effects, was really a law altogether dependent upon this general fact;—that so far as the unknown principle or agency, we term electricity was concerned, every substance is in respect of any specific attraction alike indifferent to it,—a conclusion fully borne out both by the experiment of Cavendish and Coulomb, who found that an electrical charge is independent of the nature of the substance upon which it is accumulated, and that an equal division of electricity always obtains without any regard to the kind of substance of which bodies consist†;—that in the progress of what is called a stroke of lightning the electrical agency, whatever it be, seeks to pursue a course between certain surfaces of action represented in nature by the surfaces of the clouds, and earth, or sea, which upon the whole is the least resisting. If metallic bodies are present and happen to lie in a position favourable to that course, then they become necessarily subject to the operation of the discharge; but if not in such a position, although present, then the discharge becomes determined upon other, and perhaps worse conducting bodies,—even upon what is called bad conducting bodies; and hence it is that the masts of a ship are

* James' Naval History and Ship's Log.

† Weale, Rudimentary Electricity, (p. 137, 2nd edition.)

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shivered in pieces. The whole question is therefore resolved into a question of resistance and distance, and it is to the laws deducible from a practical scientific investigation of these elements that we must look for an adequate explanation of the apparently precarious and capricious course of the electrical discharge, as seen in its operation upon ships under the form of lightning; and in the several anomalous instances in which it appears to seize upon or avoid good conducting matter.

7. The French philosophers under an impression that lightning strikes the highest points, and that conducting bodies can attract and determine the course of lightning; were led to imagine that when judiciously applied to a building as a defence against its destructive effects in the usual way of a lightning rod, such a rod could protect surrounding bodies, within a circular distance equal to twice the radius of its elevation,* which is by no means a general truth. Experience is at variance with such a deduction. For example, in the cases of ships of the British Navy, struck and damaged by lightning, we find instances of lightning striking the fore-mast, a lightning conductor being applied on the main-mast. All this in fact, depends on the resistance to the course of the discharge in this or that direction, and hence lightning does not always strike the highest point or fall in a certain direction upon a conductor. The following deductions bearing on this question and derived from an analysis of the numerous instances above alluded to, in which H.M. ships have been struck and damaged by lightning, are not without much practical value.

From this analysis it appears, that in regard to ships, lightning strikes upon the top-gallant-masts or highest points about twice in three times. In about one in five times it strikes the top-masts, or next highest points. In about one in seven times it strikes the lower masts, and in about one in fifty times, it falls directly upon the hull, so that a stroke of lightning must frequently assail a ship in directions more or less oblique.

In about two instances out of three, a ship is struck by lightning on the main-mast only. In about one in five cases on the fore-mast only; in about one in twenty on the mizen-masts only; in about one in eighty instances on the jib-boom; in about one instance in 200 lightning has struck the extremity of a yard without falling on the masts; in about one case in six the yards have suffered with the masts. The fore and main masts may be struck simultaneously or the main and mizen masts, and even all three masts simultaneously, but we find no instance in which the fore and mizen masts are struck simultaneously, exclusive of the main-mast.

8. We further find, that once in sixteen instances the discharge has fallen on ships in a divided stream, producing a sort of double or even treble discharge; in about one in twenty cases lightning has fallen obliquely in respect of the mast and hull; in about one in twenty-seven cases ships have been struck by successive explosions in the same storm from two to five times within an hour—four cases occur in which lightning has struck the fore-mast a chain conductor having been applied to the main-mast. These important deductions from a large collection of

* Annales de Chimie et de Physique, vol. 26.

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facts evidently confirm the view just taken of discharges of lightning; and prove that their course is no way determined by any specific attractive power resident in metallic bodies, attached to the masts, or yards, or otherwise forming a portion of the hull, but by other causes foreign as it were to the mere presence of such bodies, and which are to be considered rather as the patients than the agents in determining the path of a stroke of lightning.

9. Admitting then the truth of these examples it should follow, that if a ship were perfectly non-resisting in all its parts in respect of electrical discharge, no damage could possibly arise to it by lightning; since at the instant of the electrical discharge striking upon any point of the general structure, the explosive form of action, we term lightning, would immediately vanish and would be converted into what may be considered as a comparatively quiescent current or currents of electricity, having unlimited room of expansion in all directions upon the surface of the sea, that is upon the surface to which by a law of nature they are determined. To arrive, therefore, at perfect security for ships in lightning storms at sea, we should endeavour to bring the general fabric into that passive or non-resisting state, it would assume, supposing the whole structure were metallic throughout, or as nearly so as possible. The closer we approximate to such a condition, the greater the security.

10. With this view the author proposed to the Board of Admiralty, now nearly a quarter of a century since, to complete the conducting power of the masts, by incorporating with them a series of copper-plates of given and capacious dimensions from the truck to the keelson, so mechanically arranged and combined in two laminæ, as to yield freely to any flexure or strain to which the spars might be subject, at the same time preserving an efficient and unbroken chain: and then, to connect these vertical conducting lines by conducting plates similarly arranged with the various metallic bolts passing through the keelson and other parts of the hull to the copper expanded over the bottom: thus uniting as it were into one great chain, the conductors on the masts, the metallic bodies in the hull, and the general surface of the sea, so that from the moment of lightning falling on any point aloft, the explosive action would cease, and the general fabric be insured against further damage.

It was, however, never pretended that this system of lightning conductors would entirely reduce the electrical action to a state of perfect quiescence, inasmuch as it was after all, only a valuable approximation to a state of things by which that result could be certainly attained. Nevertheless, the electrical discharge, it was contended, would be so far robbed of its violent expansive and explosive action, as to secure the general fabric against danger, and all those terribly destructive and calamitous effects so constantly occurring in cases of ships struck by lightning.

Moreover, the system fulfils all the great conditions requisite to a good practical application of lightning conductors in ships. It had been the great defect of the many temporary methods tried, that the conductor was partially and imperfectly applied, and of small and limited capacity, liable to all the damage incidental to a ship's rigging, seldom in place

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when required, always a source of trouble and anxiety to the crew and officers of the ship, who were held responsible for its repair and application. It had hence failed upon the whole to insure the required security, as the vast amount of damage done to our navy by lightning abundantly testified. Now, in the case of a permanently fixed and capacious system of conductors such as here proposed, and forming an integral part of the ship, the general fabric itself became as it were continuously conducting in all its principal parts. Hence, the conductors by which the safety of the vessels is insured, are always in place—always ready to meet the most unexpected danger, and whilst clear of the standing or running rigging, and admitting of every possible motion of the masts, they also admit of any part of the mast being removed, either by accident or design, without interfering for a moment with its efficiency, being altogether independent of the crew of the ship who are not required to handle, place, or replace the conductor to their great peril and annoyance: finally a discharge of lightning falling on the ship in any given point, is prevented from entering upon any circuit, or course of which the conductor does not form a part—so that the system fulfilled strictly all the essential conductors of a perfect defence from lightning on shipboard.

It is to be further observed, that the author proved by original researches in science, that this system was perfectly consistent with all the great laws of electrical action, that in whatever position the sliding masts were placed, or however circumstanced, the arrangement presented a course to the sea, having less resistence than any other which could be assigned, and that hence, the mere position, or fracture, or removal of any portion of the mast was a matter of indifference.

11. The Government deterred by the popular prejudices so violently opposed to these views, and feeling the deep responsibility incidental to the adoption of a system of conductors which it was asserted would certainly bring the awful element of lightning into the body of the vessel, were very slow in giving full credit to the author's reasoning. But they consented in 1823, about two years subsequently, to submit the question for the consideration of three very eminent men as a Committee of the Royal Society, viz—Wollaston, Davy, and Young. Dr. Wollaston, known to have been one of the most cautious, as well as one of the most profound philosophers in Europe, expressed his unqualified and general approbation of the system in very plain terms.* The whole question underwent a rigid experimental examination, and the author submitted to these gentlemen several new inquiries in electricity. Experiments were tried on a large scale by means of a vessel prepared with the conductors and floating in the sea, by which the certainty of the operation of the transmission of the electrical discharge into the water, under every possible position or variation of the masts was completely verified, and that too, without liability to any kind of lateral explosion by the assumed influence of bolts entering the spars, or other metallic masses in their vicinity: the shock from thirty square feet of coated glass was subsequently caused to pass from the truck of a line of battle ship through

* Shipwreck by Lightning Report, page 73.

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the hull into the sea, and over 30 or 40 fathoms of water, inflaming a howitzer mortar in a boat outside the ship, and a mass of inflammable matter at the truck; but without being sensible in the intermediate system of conduction. The investigations and experiments were new of their kind, and were allowed to have a most important bearing on the general nature of electrical action, and the great question of the application of metallic substances as a means of guarding ships against the terrible element of lightning.

12 Although the general principles to which we have adverted were thus clearly exemplified, and countenanced by some of the greatest men of science of the day; still, the danger of bringing lightning into the ship was strongly insisted on. Many influential men set their face against it. The mere assertions, and groundless objections of violent prejudiced and unlearned men so alarmed the Government, that although two ships were ordered by the Comptroller of the Navy* to be fitted for experiment, yet the order was subsequently rescinded. The abstract idea of carrying a lightning conductor through a ship close by the magazine, was, it is true, a somewhat bold and appalling proceeding, considering the temper and prejudices of the day. Yet it was extrordinary, that those who so violently opposed it, made no sort of objection to, virtually the same thing being carried out on shore, since there was scarcely a powder magazine in Europe which had not lightning conductors much more disadvantageously placed in connection with the walls, and in some instances much nearer the explosive compound, than would have been the case in a line of battle ship. So completely, however, had the notion of alarm in the latter case occupied the mind, that the palpable contradiction involved in the supposition, that the principle was true for a magazine on shore, and false for a magazine afloat, seemed never once to have been considered. But as observed by Admiral Sir Byam Martin in one of his valuable reports on the subject, the principle was either true or false; it could not be both. With respect to the objection based on the bringing lightning into the ship, that was evidently a fallacy; because, as we have seen, (6) directly the electrical discharge strikes upon the conductors aloft, the explosive form of action we term lightning vanishes; it is, in fact, no longer lightning: so far therefore from bringing lightning into the ship, the proposed system was the most effectual means of keeping it out.

13. It is important to observe here, how completely a popular prejudice may often vanquish the deductions of the soundest philosophy. This however, is perhaps after all, not altogether without its use, since the truth is thereby more completely purified from any attendant error in its still progressive course. Still the immediate result was, that the proposed method of securing ships from lightning, not meeting with sufficient support from the Government against the general, but unfounded apprehension of the day, became for the moment laid aside, as being more or less visionary and dangerous, and the question was not again

*Admiral Sir J. Byam Martin, who took a most liberal and enlightened scientific view of the whole question.

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entertained until the year 1830, when terrible and repeated damage by lightning had ensued to H.M. ships. Thus in 1822 the *Albion* of 74 guns, at Portsmouth, lost her main-mast, and was otherwise severely dealt with by the electrical discharge; another ship of the line, the *Ocean*, was also damaged at Smyrna. In 1824, the *Phæton*, a large frigate was set on fire at Gibralter, and sent home under a jury fore-mast for refit. In 1828, the *Thetis* frigate, and *Heron* corvette, and which had been sent into the Pacific for the protection of our trade, were both disabled, so that convoys could not be granted. In 1830 a large frigate, the *Madagascar*, with other vessels was struck by lightning at Corfu, and severely damaged; the frigate was crippled in her fore and mizen masts, and was struck by destructive discharges no less than five times in an hour. In August of the same year, two ships of the line, the *Gloucester* and *Melville*, both lost their main-masts, beside other damage, when sailing out of Malta to join the Mediterranean fleet, after an expensive refit. In short not a year passed without some inconvenient and terrible loss to the Treasury and ships of the Navy by the unsparing power of lightning. A brig, the *Clinker*, when on the Coast of Africa was made quite a wreck; in another brig, the *Sappho*, ten men were killed outright, and the spars shivered. The *Tamar* of 26 guns had her sails set on fire and the masts shivered; such are a few instances only of the numerous cases of damage and destruction by lightning which continued to call for some redress at that time from the Board of Admiralty.

(To be continued.)

Appointment and Report of the late Committee on Ships Lights to prevent Collisions.

Admiralty, 14th February, 1852.

Sir.—My Lords Commissioners of the Admiralty having been empowered by the Act 14 & 15 Vict. c. 79, dated the 7th August, 1851, to establish regulations relative to lights to prevent collision; and being desirous of having the opinion of certain officers practically conversant with the subject, have nominated a Committee, consisting of members mentioned in the margin,* of which their Lordships request you will take upon you the office of chairman.

The object to which my Lords more particularly desire to direct the attention of the Committee is, that of the feasibility of sailing vessels carrying and exhibiting lights; and if the Committee should be of opinion that it is desirable as well as practicable for sailing vessels to be

* Capt. the Hon. R. S. Dundas, C.B.; Capt. F. W. Beechey, R.N.; Capt. W. L. Sheringham, R.N.; Capt. H. Nelson, one of the Elder Brethren of the Trinity-House.

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compelled to exhibit lights, my Lords would be glad to be favoured with the opinion of the Committee as to the best mode of carrying the same into effect.

My Lords have directed all the necessary papers to be at the disposal of the Committee, and every facility to be afforded them in inquiring into the subject.

I am, &c.,
(Signed) W. A. B. HAMILTON.

Captain the Hon. R. S. Dundas, C.B., &c. &c.
Captain Superintendent of H.M. Dockyard, Deptford.

REPORT.

Committee Room, Admiralty,
22nd March, 1852.

THE Committee appointed by the Lords Commissioners of the Admiralty to inquire into the Means of establishing Regulations for lights to be carried in sailing vessels at sea, having assembled on February 14th, and having continued their meetings from time to time until the 22nd of March, 1852; and having fully considered the subject on which their Opinions have been required, have agreed to the following Report, viz.:—

The instructions of the Lords Commissioners of the Admiralty dated 14th February, 1852, having been read, the attention of the Committee was necessarily directed, in the first instance, to the Act of the 14th and 15th Vict. c. 79, by which their Lordships have been empowered to issue directions for regulating the lights to be carried in sailing vessels at sea. The Committee have observed that it has been evidently the intention of the Act that some such regulations should be promulgated; but the fullest latitude and discretion appears to have been given to the Admiralty, to establish from time to time, to alter and to revoke, any regulations which may be thought necessary by their Lordships. A very cursory inspection of the papers which were furnished for the information of the Committee was sufficient to show, that in consequence of the authority thus given to the Admiralty, a general expectation has been raised among the shipowners in the country that some precise regulations would be issued, and many memorials have been presented to Her Majesty's Government, both before and since the passing of the Act, praying for a decision upon the subject, not only on the ground of the expectation created by the enactment, but also from the numerous collisions which are known to have taken place at sea, and are supposed by many persons to have been occasioned by the want of such necessary regulations. It was likewise observed by the Committee that the opinions of many competent persons, if not directly adverse to precise regulations, were, nevertheless, various and conflicting in regard to the effects likely to be produced by almost any system of lights that could be devised. The individual impressions of the members of the Committee at the outset were not less conflicting, and after comparison of the opinions entertained by each it was soon determined that no

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satisfactory conclusion could be expected unless with the assistance of the evidence of such practical persons as could be induced to favour them with the results of their experience.

Communications were therefore forwarded to persons connected with Associations of Shipowners, and with Steam Navigation Companies, in the ports of London, Bristol, North and South Shields, Liverpool, Dublin, and Glasgow; and much readiness has been shown by all parties to furnish the evidence which was desired. Among the witnesses whom we have had an opportunity to examine will be found some of the most experienced shipowners, pilots, masters, and others, of trading and coasting vessels, as well as officers in the royal navy of different ranks, and of long experience in all parts of the world.

From these persons many varieties of opinion have been collected, as will be seen on inspection of the minutes of their evidence appended to this Report. Several plans, not always well digested, have been proposed by some of them; but we regret to say, that except in the prevailing desire to establish satisfactory regulations, and a general impression amongst most of them that many lamentable collisions might be avoided if the motions of sailing vessels could be indicated at night, there has been scarcely a single practical suggestion upon which anything approaching to uniformity of opinion has been expressed. We have accordingly found great difficulty in forming a judgment upon the whole: and we are well convinced that the greatest possible circumspection will be necessary in any regulations which may be established.

From the general tenor of the evidence of persons accustomed to the navigation of the mouth of the Thames and the east coast of England, there exists the strongest apprehension that the dangers of the navigation would be increased by regulations which might render it compulsory upon sailing vessels to carry lights constantly exhibited at sea; and similar objections, although not to the same extent, are entertained to fix lights in ships at anchor in crowded roadsteads. The same objections to constant lights have been stated by some intelligent witnesses connected with the navigation of the mouth of the Mersey and the Irish Channel; but we have observed in general that such objections have been less frequently and less strongly expressed by persons connected with the west than with the east coast of England; and that a considerable number of witnesses are favourable to fixed lights in ships at anchor in roadsteads and fairway channels.

Great complaints are made on the part of the Steam Navigation Companies in general, on the ground of the injustice inflicted upon them in holding steam-ships responsible for damage done to sailing vessels in which no lights have been shown; and these complaints have been increased by recent legal decisions, which have caused much alarm amongst persons connected with these Companies. We are inclined to think that it may have been partly owing to these circumstances, and to the frequent neglect on the part of the smaller coasting-vessels when lights are required to be shown, that many strong opinions have been expressed in favour of constant lights to be carried by all sailing vessels. The wishes of the Steam Navigation Companies in this respect have been

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repeatedly stated in many urgent memorials. Although one remarkable exception to the prevailing opinion amongst them, in favour of fixed lights, is to be found in the General Steam Navigation Company of the Port of London. A very large proportion of the masters conducting the vessels of this Company are decidedly adverse to fixed lights for sailing vessels.

A manifest distinction, however, will be perceived between the remedies which might be required to relieve the owners of steam-ships from legal responsibilities, which may be shown to have pressed unequally upon them, and the means which would be likely to prove most effectual for the prevention of disasters at sea.

The Committee have considered that it is solely upon such questions of practice at sea that their opinions have been requested by the Board of Admiralty; and on mature reflection upon this very material point, they are not prepared to recommend that it should be compulsory on sailing vessels to carry lights constantly exhibited. They are bound to state, however, that they are not unanimous in this opinion. Much and anxious discussion has arisen upon the subject, and it has been thought by some, that the principal difficulties might be obviated by compelling the larger classes of ships only (say above 300 tons) to carry lights constantly displayed, leaving it optional with others to carry or show them when required. By this means the confusion to be apprehended from the display of numberless lights in very crowded channels would be obviated to some extent. It being the opinion, however, of the Committee, that it will be difficult in the smaller classes of vessels to fix lights, in any positions in which they will show and be certain to be seen in the desired direction in all descriptions of weather, it became necessary to consider in the next place, in what manner the lights for these classes could be regulated with good effect. It must be evident at this point, that if any system can be devised which could be worked effectually for the smaller vessels in narrow channels, it might be considered desirable, for the sake of uniformity to adopt the same system for ships of a larger class, either in wider channels or in the open ocean.

Many suggestions have been made in the course of the evidence to provide for the exhibition of coloured lights as occasion may require, to distinguish either the side of the vessel or the tack on which she might be steering; or, lastly, the direction in which she intended to alter the helm on the approach of another ship in an opposite direction. The Committee are of opinion that this latter suggestion would be liable to frequent and very dangerous misapprehensions; but some weight is due to the suggestions by which the tack or the side of sailing vessels might be indicated to others on their approach.

In dealing with this part of the subject it is to be observed, that while the Committee hesitate to recommend the adoption of fixed lights as a general practice in all vessels, it becomes indispensable to consider the effects to be produced by the occasional exhibition of such coloured lights on sailing vessels: and among the various points which have divided the opinions of the Committee, the following may be particularly enumerated, viz.:

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Firstly, It has been urged that all the reasons which may be advanced as to the inefficiency of lights which are only kept ready to be shown, and not constantly hoisted, must be applicable also to coloured lights when not fixed, with the additional disadvantage arising from the possibilities of confusion in the hurry of the moment, or from want of intelligence, or carelessness in the display of the proper colour.

Secondly, That there is apprehension that coloured lights for sailing vessels may tend, in some measure, to destroy the distinction now established with good effect for indicating the motions of steam-vessels on their approach.

Thirdly, That, in the regulations issued by the Board of Admiralty for fitting the lights of steam-vessels, it is announced to be "important" as "a principle first introduced with the plan" that the lights should be fitted with screens, without which they "would be ineffective"; and a question arises, in consequence, of the difficulty of properly directing screens for lights intended to be shown by hand, and liable to be exhibited either on the side, or near the quarter, or on the bow, acccording to the discretion of those using them, whether intelligent or otherwise.

Fourthly, That coloured lights, intended to be shown only occasionally, and for the purpose only of indicating the *tack* of sailing ships, if exhibited on the sides to which the particular colours do not now properly belong in steam-vessels, would often indicate a direction of the ship's head in sailing vessels directly contrary to that which is now indicated in steam-vessels by the same colours, and thus tend to create confusion.

Much perplexity has arisen from the discussion of all the considerations involved in these several particulars; and the Committee have again to express their regret that they have failed to arrive at a common agreement upon the subject. The confusion apprehended, on the one hand, by the introduction of coloured lights when not fixed; and the recognized difficulty, on the other, of fixing them in the smaller and most numerous classes of vessels, have led principally to this embarrassment. Under these circumstances, and being unwilling to separate without advancing, as far as possible, to a definite conclusion on a subject which has been discussed with a full sense of responsibility, the Committee deem it proper to state, that in any combinations of lights which might be adopted they think it will be essential to indicate within definite limits the direction of the ship's head in every sailing ship in which lights are to be exhibited. Two of the members of the Committee are of opinion that this object may be accomplished by the introduction of a red and a green light in sailing vessels to be either fixed or shown by hand, as occasion may require on the sides to which these colours respectively belong, in the existing regulations for steam-vessels; and the adoption of this arrangement is strongly insisted upon by them as a simple, practical, and sufficient indication of the direction required to be shown.

The remaining members of the Committee are of a different opinion, and are persuaded that the indication required will not be really afforded by such means, but will be much too vague and indefinite; and, in

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certain cases, the colours, especially when not fixed, will be directly calculated to mislead. They are, at the same time, much impressed with the importance of avoiding regulations which, if not decidedly advantageous, may never be readily adopted by foreign ships, and cannot be made compulsory upon them beyond the limits of British jurisdiction.

There being no other plan and no combinations of lights on which less difference of opinion has existed, the Committee are under the necessity of leaving the consideration of these differences to the decision of the Lords Commissioners of the Admiralty; but it has been thought by a majority of the Committee, that it will be an advantage to establish a regulation by which it may be made compulsory under the penalties prescribed by the Act, for all vessels when at anchor in roadsteads and in the usual fairways, to exhibit a constant bright light; and it should be understood that this latter regulation is not intended to apply to harbours and other places in which regulations may be duly established, either by the Queen's Harbour-masters or by the proper authorities for local purposes.

Under the circumstances above stated, and looking to the contingency of the rejection by their Lordships of the plan submitted in this form to their decision, the Committee have thought it desirable to consider whether any other steps can be taken to relieve the owners of steam-vessels from the undue pressure of responsibility of which they now complain. For this purpose, they would suggest that, in the absence of other plans which their Lordships may be induced to prefer, it may be advisable to enforce, by direct regulations, and under all the penalties of the Act of 14 and 15 Vict., the strict observance of the custom to showing a light, which has been long recognized, but much neglected by sailing vessels. The Committee are of opinion that the master of every sailing vessel on approaching, or being approached by another vessel, and whether such vessel is stated to have been seen or not, should be held responsible for showing a sufficient light in time to avoid collision; but it must be left to the discretion of the master to determine on his own responsibility whether such light is to be kept constantly displayed. It has been remarked by some of the witnesses, whose evidence is appended to this Report, that a want of vigilance has been often observable in vessels which have been in the habit of fixing a light.

We have the honour to be, &c.,

R. S. DUNDAS, *Captain.*
F. W. BEECHEY, *Captain, R.N.*
W. L. SHERINGHAM, *Captain, R.N.*
HENRY NELSON, *Elder Brother, Trinity House.*

In the foregoing report, which is highly creditable to the Committee, the practicability of compelling sailing vessels to carry and exhibit lights

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at night in order to prevent, if possible, the repetition of the numerous and serious collisions at sea, has been very properly, one of their first considerations.

That it is indeed, a subject of deep interest to the community at large, and to the maritime portion of it in particular, is manifest, not only by the daily accounts which reach us of the frightful loss of life and property by the collisions of vessels; but by the numerous and urgent petitions from the various steam companies, praying to be relieved from their unfair and ruinous liability to the heavy penalties, which are almost invariably inflicted upon them in cases of these collisions.

The legislature has very properly empowered the Admiralty to regulate the lights to be carried in sailing vessels, and their Lordships under the heavy responsibility thus thrown upon them, wisely summoned the Committee to investigate the whole subject, and to advise what might safely and usefully be done in it.

Although we were quite satisfied that the Committee had no easy task on hand, we confess to something like disappointment at the report appearing as it did to us, to leave the question in pretty much the same unsatisfactory state, as before; in fact that little had been done to mitigate the evil, and to guard by some well devised enactment, against the undoubted neglect on the part of our merchant shipping.

Such was our first impression, and we attributed it in some degree to an oversight in casting the Committee at an even number; for, it was evident, that a plausible scheme might be lost from simply the want of a casting vote.

On a careful review of the whole case however, we are rather disposed to reverse our judgment, for it might have been a questionable step on the part of the Committee to have recommended a compulsory enactment affecting the interests of so large a portion of the community unless something like an unanimity of opinion had prevailed among themselves.

The Committee seems to have spared no trouble in collecting from all parts of the kingdom the opinions of persons likely to be the best informed on the subject, and it really would appear that the greater the amount of evidence obtained, the greater is the amount of confusion and confliction of opinion that prevails; all appear to have made up their minds that something should be done, but very few had any scheme whatever to propose, and scarcely any two agreed that any one scheme was the best. A dread of over legislation seemed to pervade all parties, and that whatever might be done nothing like perfection would be gained.

As may be seen by the report, a strong opinion prevailed in the Committee, that the introduction of coloured lights similar to those used on board steam-vessels would have been properly adopted for sailing vessels, to indicate within certain limits the direction a ship is going. We by no means would advocate for *sailing vessels* the introduction of coloured lights as a compulsory enactment, agreeing as we do in opinion with that half of the Committee who dissented that they would prove in practice, vague and indefinite, and otherwise open to many very serious objections. Certainly there is no great preponderance in the weight of

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evidence in their favour, for out of twenty-seven witnesses examined, twelve were in favour of the two coloured lights, either to fix or to show occasionally; five in favour of a single red light, and ten against coloured lights altogether. And although there could be no difference of opinion as to the advantage of adopting such a system of lights as would indicate how a ship is steering, yet all seemed impressed with the difficulty of accomplishing it. But before we leave the question of coloured lights, it may be well to state that if they are ever used by ships, the opinion is pretty general that they should be exhibited in the same way that they now are on board steam-vessels, to indicate the side of the ship, that is to say, *red on the port side* and *green on the starboard side.*

This fact induces us to suggest that although the Board of Admiralty does not consider it expedient to enforce by direct enactment, the exhibition of coloured lights on board sailing vessels, still as a matter of experiment it might prove advantageous to enjoin the masters of ships that if *they do show coloured lights at all, they must only use the red and green light, and only show them on their proper sides.*

The importance of the subject has led us inadvertently into a longer discussion than we intended. We will, therefore, conclude our observations by stating our concurrence with the opinion of the Committee, that much may be done by a *vigilant look out,* and a good light always at hand to show when vessels approach each other which has not been the case hitherto in many instances.

We are informed that it is the intention of the Admiralty to enforce a strict observance of the law, to exhibit a light in time, and that in the event of collision, the bare fact of not having shown a light, no matter what the excuse may be, shall render the vessel neglecting to do so, responsible for the collision and its consequences.

We are firmly convinced that in all future collision cases if the judge and jury would take this important fact into their consideration, collisions at sea will soon become comparatively of rare occurrence.

Here is a case (which has just occurred while the foregoing is in the press,) of a collision between the *Propontis,* Cape screw steam ship, and the *Ann Rebecca,* a Dutch ship. Ignorance of the whole subject seems to have prevailed on board the foreigner, who is stated to have mistaken the steamer's lights *for those of the Start.* The account is from Gravesend as follows:

The General steam screw ship *Propontis,* Captain Glover commander, which brought the disastrous news from the Cape of Good Hope, of the loss of the *Birkenhead,* steam-vessel, has just reached here on her way up the river, and reports being in a serious collision with a Dutch merchantman, while coming up channel from Plymouth, which ended in the foundering of the vessel, and the somewhat narrow escape of the crew. It appears that, after the *Propontis* had landed her mails on the 6th instant, and had made the usual stoppage at the above port, she resumed her voyage up channel for the Thames. The Start Point was made between six and seven o'clock, and it would appear that the steamer hoisted the usual coloured lights, in conformity with the Admiralty regulations. About half past nine o'clock, when some twenty-

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four miles from the Start light, the look-out men reported a vessel ahead on the port bow. At that time the *Propontis* could scarcely be going more than seven miles an hour, having to contend against a strong tide and easterly wind. Her helm was ported, the proper way when two vessels are approaching, and her speed reduced, and it was anticipated that the sail in view would have also put her helm a-port, which would have taken both vessels clear of each other.

From some misunderstanding or other, however, it was put to starboard, which brought her towards and under the steamer's bows. A collision appearing probable, as the vessel was coming down with the tide and wind, the *Propontis* was stopped, her screw reversed, and helm put hard a-port, in the hope of averting the accident. All failed, however, and they came in fearful contact, almost bows on. It was then ascertained that she was the *Ann Rebecca*, of Amsterdam, and was bound for some port in Syria, with a cargo of sugar and other merchandise. The force of the collision drove in her bows and spars, and on getting clear of the *Propontis*, the crew speedily ascertained that she was fast filling. Their cries brought to their aid a boat from the steamer; and the chief officer, Mr. Hunter, perceiving the condition of the vessel, at once took off the master and crew, (eight in all). They had scarcely left her, however, before she took a tremendous lurch on one side, and went down in deep water. The crew were put on board the steamer, and she resumed the voyage. The disaster does not appear to be attributable to any neglect on the part of the officers of the *Propontis*. Indeed, it would seem that her lights were mistaken for those of the Start by those on the look-out on the Dutch ship. How that could happen, however, does not very clearly appear, as the steamer's red light must have been fully exposed at the moment. The latter does not appear to have sustained the least injury, which may in a great measure be attributed to her construction of iron. The shipwrecked crew were taken on to the East India Docks, at Blackwall, and forwarded to their respective homes. Doubtless the loss of the Dutchman will prove rather heavy, but she is stated to be insured.

The Ships seen in the Ice in the Spring of 1851.

A sensation has been recently occasioned among us, and that too of no trifling nature, by the account of two vessels reported to have been seen on the ice off Newfoundland by a merchant brig on her voyage to Quebec, so long ago as the month of April last year. By the press, that is, that portion of it which favours the opinion of Franklin's ships being locked up in the ice, after having passed through to the north-west of Wellington Channel, the whole story is ridiculed. But being of a *Nautical* caste there are certain conditions and circumstances of the vessels so seen, that do not occur to landsmen, and consequently no single good argument has been advanced against the probability of these

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being Franklin's ships. Instead of this, which would really have been acceptable, some atrocious absurdities have been deliberately committed to paper, intended of course for the edification of those who have to depend on such sources of information! They may pass current among shore folk, but Jack would say

"Such lingo my timbers can ne'er coil away,"

and in spite of these off hand dealings, the story gains ground, proving the truth of the old adage of the Scotch about "facts" and all that.

It is certainly remarkable that in the case of the Arctic ships *Erebus* and *Terror*, almost every step in the measures for their discovery has heaped mystery on mystery. Who could have imagined for instance, that having traced them to the Wellington Channel five years after their departure, no written document should have been found left by them, and that we should have to infer the most probable place to find them from the intentions expressed by Sir John Franklin before his departure. How far those intentions were carried out beyond Wellington Channel can be but mere guesswork! Was he proceeding onwards, or was he returning home? Oh, onwards of course say some, but homewards say others. In fact all is mystery. Then, here are two ships seen abandoned on the ice, having drifted out of Davis Strait, and notwithstanding their unusual appearance, as if to keep alive the mystery, they are passed by unexamined, and of course long since have disappeared, as soon as the ice had sufficiently rotted for them to fall through it into the sea. They are gone, but they too have added still more mystery to this mysterious subject!

The several letters in which the whole particulars are related, have appeared in the public papers, and are no doubt known to most of our readers.

Still, to all of us as it is a matter of much interest, we will endeavour to relate the principal of them in a few words.

The story runs thus:—

About the beginning of last March, Mr. Share, second master of H.M.S. *Sampson*, happened to be at Shields, and fell into company with a merchant commander named Storey, who, speaking of icebergs informed him, that another commander, then in Shields harbour, when on a voyage to Quebec, in April 1851, had had reported to him by the mate of the morning watch, that an iceberg was seen ahead, that on nearing it, two three masted vessels were seen on it with their top-sail-yards and top-gallant-masts down; but no one seen on board of them. On Mr. Share asking why this had not been made known before, he was informed that the commander alluded to had satisfied himself with naming it to his friends, and feared the shame of publishing it after so long an interval of silence. Mr. Share naturally anxious to see the commander alluded to, was informed by Mr. Storey the next day, that he had sailed. The foregoing forms the substance of the first communication on the subject, and which was addressed by Mr. Share, to Captain Jones, commanding his ship the *Sampson*, and was communicated by Captain Jones,

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in the usual way to the Admiralty. On which certain questions were sent for Mr. Share's answers touching the character of his informant, the latitude and longitude where the ships were seen, and other particulars which are more fully stated in other letters.

Thus the subject was started, and Commander Hawkins, of the coast guard at Sunderland, was next directed by the Admiralty, to pursue the enquiry of Mr. Storey, who was then at Tynemouth. Mr. Storey stated to the Commander that—

"He left Bristol for Quebec, as master of the brig, *Agnes*, on April 5th, 1851, crossed the banks of Newfoundland about the 20th, arriving at Quebec on May 5th. He met Mr. Edward Coward, the master of the brig *Renovation*, and, as both their vessels belonged to the same owners, the Youngs, of Shields, and were ready at the same time for the voyage home, they frequently met at the Custom-house, when they entered into conversation respecting their outward-bound passage, and were of opinion that they had crossed the banks about the both same time—namely, on the 20th of April. Mr. Storey then proceeded to state—

"'He (Captain Coward) also related as follows, as near as I can recollect:

"'When near the east edge of the bank, in lat. 45° 30′ N., wind north-east, fresh breezes and clear weather, as much as I could carry fore-top-mast studding-sail, fell in with icebergs, one of which was very large, with field ice attached to it, in which there were two three-masted ships, having their masts struck and yards down, and all made snug; to all appearance they had passed the winter together in the ice. At about five o'clock in the morning, when within one mile of them, the mate called me to see the berg and ships; by the time I got up, and dressed, and on deck, my ship was abreast of them; took spying-glass and carefully examined them, to see if there was any one on board, but could not see any one. At the time I did not think of Sir John Franklin's missing ships, anxiety to get ahead out of the danger while the weather was clear from fogs, and being too far past before I could make up my mind, caused me not to reduce sail and examine them more accurately. I am since of opinion they might possibly be the missing ships."

Such was the account given by Mr. Storey to Commander Hawkins from his recollection of what had been related to him by Mr. Coward, and having ascertained that Mrs. Coward resided at Shields, Commander Hawkins finds her an intelligent young woman. She corroborates the account of her husband, as having been the same as he had given to her, states that he had sailed for Venice on the 11th, and that the mate of the *Renovation*, who had sailed with her husband on his voyage to Quebec, was now master of the *British Queen*, about to sail from Limerick, who might give further information on the subject. It appears also, that Mr. Cleugh, who crossed the banks in command of the barque *Pearl*, in company with the *Renovation*, corroborated the statement of Captain Coward, and said it was a subject of conversation between them at Quebec.

The next important document is the statement of Mr. Simpson, forwarded from Limerick by Captain Palmer, and is as follows.—

Limerick, April 9th, 1852.

The instant I received your letter this morning, I proceeded to Limerick, and went on board the *British Queen*, where I found Mr. Simpson, late mate of the *Renovation*, he states as follows:—

On the 20th of April, 1851, at 6h. A.M., I saw two full-rigged ships (one about 500 tons, the other 350), on an iceberg high and dry, the larger one on her beam

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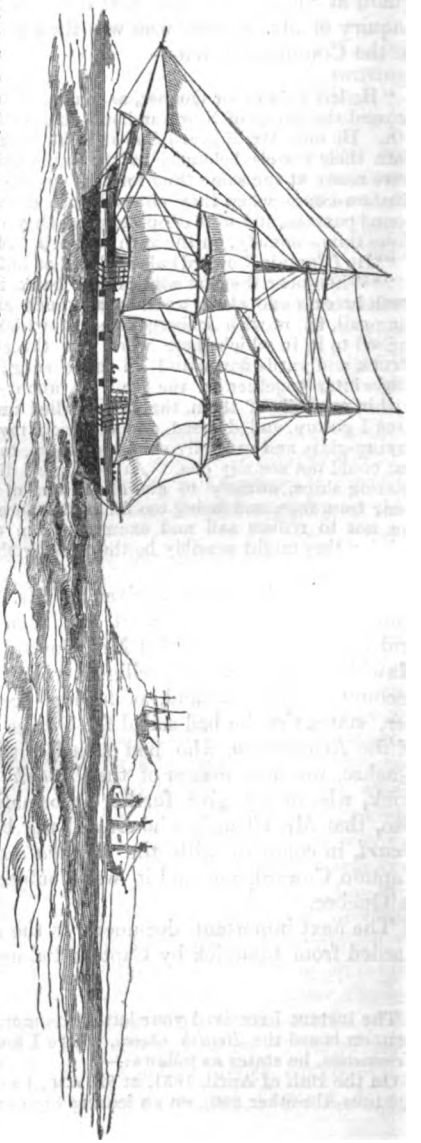
ends, head to the westward, three ship's lower masts only standing with bowsprit, masts painted white, apparently not housed over; the smaller one was about 350 tons, head to the south, with lower and top-sail-yards across, sails unbent, topmasts on end, yards very square and black, not housed over, nearly upright; both vessels apparently abandoned. The *Renovation* was then about thirty miles to the eastward of Cape Race, and the iceberg about five miles north-west. The master was sick in bed, and when Mr. Simpson called him and stated that two vessels were in sight on an iceberg, he was too unwell to take any notice, and answered, "Very well." Mr. Simpson therefore did not like to take the responsibility of bearing up to examine the vessels. The log on board the *Renovation* was kept by the mate (Mr. Simpson), and those circumstances were entered by him in the log; he thinks it is still in possession of Mr. Emanuel Young (the owner), at North Shields. I beg to enclose a sketch made by Mr. Simpson of the position of the two vessels, both of which appeared to be painted black. I have also examined Thos. Davis, now a seaman on board the *British Queen*, and who was at the wheel on board the *Renovation* when the vessels were observed, who entirely corroborates, word for word, the statement made by Mr. Simpson; but with regard to the other questions in your letter, both are unable to answer them. I close this in great haste to save this evening's post with a *Limerick Chronicle*, with an extract of Mr. Lynch's letter to Mr. Creilly in it; the original letter I fear is lost.

JOHN JERVIS PALMER,
Inspecting Commander.



The annexed is a copy of the sketch of Mr. Simpson referred to in Commander Palmer's letter. He says of it—

Limerick, April 15th, 1852.

This rough sketch is made to the best of my recollection and respecting whether they were ships or barques, I cannot for certainty say, but think from the large appearance on the mizen-mast of the large ship that it was a top and not cross-trees; and from the position of the upper one being end on, I am not certain, indeed at the time I regarded them merely as two wrecks on an iceberg.

ROBERT SIMPSON,
Late Mate of the Renovation.

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[Our artist in copying the sketch has rather magnified the appearance of the two ships, perhaps as much as they appeared through the glass. But there seems to be no great departure in that appearance from the description given.—Ed.]

The next is Mr. Lynch's letter which appeared in the *Limerick Chronicle.*

Limerick Chronicle, May 28th, 1851.

Extract from a letter from a passenger who sailed from this port to Quebec in the *Renovation* on the 6th of April last:—

We arrived here yesterday after a passage which, for the first thirteen days, promised to be one of the speediest almost on record, having been two miles to the west of Bird Island, in the gulf at the time we met the ice, and having been for sixteen days coasting along it, with a fair wind ever since; it has been very rough and a number of ships have suffered severely; indeed, to attempt to give any description of the ice would be useless. We have sailed for sixty miles of a stretch, seeking an opening without being able to effect one, which was most vexatious, as had we not met with it we should have made the passage in fifteen and a half days. The icebergs we met with were frightful in size, as the bases of some of them would cover three times over the area of Limerick, and I do not at all exaggerate when I say that the steeple of the cathedral would have appeared but a small pinnacle compared to the spires on some of them; and most to be regretted is that we met, or rather saw at a distance, one with two ships on it, which I am almost sure belonged to Franklin's exploring squadron, as, from the latitude and longitude we met them in, they were drifting from the direction of Davis Straits. Was there but a single one, it might have been a deserted whaler, but two so near each other, they must have been consorts. They were to windward of us, and a heavy sea runnning at the time with thick weather coming on, so that we could not board them.

The foregoing forms the substance of the whole story, and considering the time which has elapsed since the case occurred, and the different persons from whom it has been received, there is much evidence of its truth.

Since the foregoing was prepared the following statement has been received from Mr. R. Simpson, which contains a fuller account than the former, to which we also add a letter of Mr. Simpson to his uncle, containing a narrative of the whole event which has occasioned so much sensation. The simple straight-forward manner in which it is related shews the writer to be well worthy of confidence.

Statement of Mr. Robert Simpson, Master of the British Queen.

Mr. Robert Simpson, master of the British Queen, late mate of the *Renovation*, made the following statement before Captain E. Ommanney, commander J. J. Palmer, Commander W. Ellis (a), and Captain W. Caldwell, Inspector of Police:—

Limerick, April 16th, 1852.

Sailed from Limerick, as mate of the *Renovation*, (master, Mr. E. Coward,) 6th of April, 1851, for Quebec. About the 18th or 20th of April fell in with numerous icebergs. On the second morning after sighting the icebergs I had the morning watch. About 6 a.m. I saw two vessels lying on an iceberg. One was lying on her beam-ends, with her deck towards us, having only her lower masts and bowsprit left standing. The other had her topmasts on end, with lower and top-sail-yards across, but no sails bent; she had no top-gallant-masts up, and was nearly end on to us. She was lying on an elevated part of the ice, far above the other one. I went down and called the master who was lying very ill in bed, and reported the circumstance to him. At first he did not speak; I mentioned it a second time, when he said, "Never mind." I returned on deck,

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and stood on the lee quarter to watch the vessels; all the watch came aft to look at them also, with the spyglass. I called Mr. Lynch (passenger) out of his bed, who came up immediately in his shirt and drawers, but afterwards went down and dressed. We both examined them with the spying-glass; each man of the watch looked through the glass at them also. We continued our course; I did not like to incur the responsibility of altering it without the master's sanction, but fully expected to receive orders to close the vessels. I think I called him twice, as I told Mr. Lynch at the time I should like to go on board. We were running with the wind on the port quarter,* to the best of my recollection, under double reefed top-sails and courses. Before they were out of sight Mr. Lynch remarked that they might be Franklin's ships, as they were so near to each other. I regarded them as wrecks, and therefore did not trouble my mind further about them at the moment. I remarked to Mr. Lynch that there were no sails bent. There were no signs of any person being alive on board them. Could discern nothing but the hulls, masts, and yards. Our nearest distance when the ships were abeam was about five miles, or just able to distinguish with the naked eye the hulls and masts. There were many other icebergs in sight at the time.

We had no cargo on board. Mr. Lynch was our only passenger, and I think he came as a friend of the captain.

ROBERT SIMPSON, *late Mate of the Renovation.*

Witness, the foregoing statement has been read and acknowledged by Mr. Robert Simpson, in our presence, to be correct.

ERASMUS OMMANNEY, *Captain, R.N.*
WILLIAM ELLIS, *Commander, R.N.*
W. CALDWELL, *County Inspec. of Constabulary.*
JOHN JERVIS PALMER, *Commander R.N.*

British Queen, Limerick, April 19th.

My dear Uncle,—I received your letter this morning, dated the sixteenth, and feel great pleasure in writing the particulars relative to the two ships which were seen by me and others when on our outward-bound passage to Quebec in April, last spring, in the brig *Renovation*. It is now twelve months ago, and so many occurences have happened in the interval that the real circumstances have nearly escaped my memory; but I shall feel great pleasure in relating them to the very best of my recollection.

On the 6th of April, 1851, we sailed from Limerick for Quebec in ballast, and one cabin passenger, a very respectable young man named Mr. Joseph Lynch. We experienced a most beautiful run at the rate of nine, ten, and eleven knots per hour as far as the Gulf of St. Lawrence, nothing remarkable occurring until about the 18th or 19th, when we were surrounded by numerous gigantic icebergs; and I think it was on or about the 20th, at 6 A.M., my watch on deck, I discovered on the starboard bow a large iceberg with two ships, on it, as did also the men that were in my watch. I immediately went below and informed Captain Coward, who being very ill at the time, did not notice at first what I said. I again repeated the circumstance, and asked him what he intended to do, but he only groaned out, 'Never mind,' or something to that effect. I was anxious to get on deck again, but before I went up called Mr. Lynch, who immediately jumped up and looked at the vessels a few minutes, when he went below again and dressed himself, the weather being at the time excessively cold, the wind from the northward and eastward, blowing a fresh breeze, and I think, but am not quite certain, under double-reefed topsails, whole courses, jib and reefed trysail. This can be easily ascertained by a reference to the log-book, which is now on board the *Renovation*, and on her passage to Venice. However, in continuation of my story, Mr. Lynch, after putting on his clothes, came on deck, when he and I, in our turns, stood watching the two ships for about three-quarters of an hour, when we lost sight of them, but not the berg, which was then on the starboard quarter. We pursued our course with the greatest regret that we did not board the ships, which, to all appearance, had been a considera-

* See note in next page.

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ble time on the ice. The largest one was lying on her beam ends, with her head to the eastward, and nothing standing but her three lower masts and bowsprit; the smaller one, which was sitting nearly upright, with her head to the southward, with her three masts, top-masts on end, and top-sail and lower yards across, and to all appearance having been properly stripped and abandoned. These are the total circumstances which I can recollect; but, as the Admiralty have ordered an investigation into the circumstances, letters from Mr. Lynch, at Quebec, together with the log-book, will help to throw some light and verification of the truth. Mr. Coward told me at Quebec, he had reported the ships, when I of course supposed that the news would certainly reach England. All this has come out lately, from a letter which was written by Mr. Lynch, after his arrival, to an uncle of his, a Mr. Creilly, whom I know very well, and now residing in Limerick.

This letter, it appears, was published, in the *Limerick Chronicle*, but, strange to say, the circumstances never got circulated, I believe, out of Limerick until Capt. Coward, a few weeks ago, told a friend of his, a master of a ship, residing at Tynemouth, who, it appears, had been conversing about icebergs to another gentleman, and thus the circumstance got spread about until it reached the Admiralty, who will (and no wonder) think it a very strange affair altogether. I never heard anything more about it from any one but Mr. Lynch; and I used often to regret the ships not having been boarded. He stopped aboard of our ship a considerable time after we got to Quebec. The first thing that I heard about it since was on my arrival at Tarbert, in the river Shannon, when an officer of the Coast Guard came on board, and I furnished him with all the particulars; likewise, on my arrival at Limerick, Captain Ommanney was sent from London, to whom I also related the circumstance, and the only thing I was mistaken in was the wind, which I informed him was from the southward and eastward; and I also gave him a sketch, which I am sorry is wrong, for now that I overhaul my memory, I am almost certain it was from the northward and eastward.* However, this is of little import, merely that my story might coincide with Mr. Lynch's, who will also write, by order of the Admiralty, to the best of his recollection. My time will not permit me to enter into anything more at present. You desired me to tell you what I entered into the log book, which is out of my memory. I enclose a sketch, which is only a very rough one, but it will give you an idea, and a better one than in writing. I hope soon to hear from you, and I shall be much obliged to you by sending me a paper now and then, as there are very few to be had here. Give my kindest love to aunt and all my cousins, and accept the same yourself.

From your affectionate nephew,

ROBERT SIMPSON.

In our volume for 1849, will be found the story of the Esquimaux as given by Capt. Parker of the *Truelove*, with all the probabilities we could deduce from it after sifting it well. It alludes to Prince Regent Inlet, and the communication between Sir James Ross's and Franklin's ships, one which proved never to have taken place. But does it appear that that story was correctly translated? Was Adam Beck's story correctly translated? Might not Prince Regent Inlet have been substituted for some large inlet of the great land dividing it from Baffin Bay, called Cockburn Land, of the interior of which and the numerous intersecting inlets, we know nothing but from Esquimaux report. But it is very well known that the western side of the bay, the eastern shore of that land is considered the most dangerous, and is avoided if possible from being the part to which the ice inclines as it drifts down to the

* This has been corrected by Mr. Simpson's second sketch, the wind there being shewn on the starboard quarter.—ED.

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southward. It is by no means likely that Franklin's ships could drift out of Prince Regent Inlet through Fury and Hecla Straits, and get into the Atlantic by Hudson Strait, but they may have drifted out of Barrow Straits and down the Bay as those of Sir James Ross did in 1849, and those of Lieut. De Haven did last year!

But Captain Ommanney has taken great pains to investigate the subject and it would be imperfect without adding his letter to the Secretary of the Admiralty. It happened that a tour of official inspection took him to Limerick. He was not sent by the Admiralty as stated by some. His account runs thus;—

Limerick, April 16th, 1852.

SIR,—I beg to acquaint you, for the information of the Right Hon. the Lords Commissioners of the Admiralty, that agreeably with their desire contained in your letter of the 10th instant, I was enabled to proceed direct to Limerick, where I have found Mr. Simpson, late mate of the *Renovation*, and Thomas Davis, seaman of the same vessel. Having made every inquiry into the circumstance referred to, the result is herewith submitted to their lordships.

The statement made to me by Mr. Simpson, in the presence of Com. J. J. Palmer, R.N., Com. William Ellis (a), R.N., and the Inspector of Police, Captain William Caldwell, is herewith transmitted. That two vessels were seen in the position described, there seems to be no shadow of doubt, though it is to be regretted that, owing to the distance at which the *Renovation* passed from the piece of ice with the ships lying on it, no fact can be elicited by which the vessels can be identified, though I have put every question which my experience dictates.

The evidence of Thomas Davis, seaman, who was at the helm when the ships were first seen, and all the time when they were in sight, confirms the fact of such vessels being seen in the position referred to, as while at the wheel he could distinguish them with his naked eye. The rest of his information confirms what has been stated by Mr. Simpson.

The fact of having passed these vessels without examining them must appear strange to many. It has been my earnest desire to obtain some satisfactory reason for this apparent act of supineness, and to extract the feeling which existed in the minds of those on board the *Renovation* at beholding such an extraordinary sight. The duration of the time while the vessels were visible appears to be no more than three-quarters of an hour. The *Renovation* at the time was making about a W.b.N. (true) course, running six or seven knots an hour through the water.

Mr. Simpson appears an unassuming person, and, entertaining a very proper deference to the authority of his superior, would not presume to alter the course without the master's sanction, who lay ill in bed at the time, and did not come on deck when the circumstance was reported. He made known the fact to him, and he fully expected to receive orders to haul up and ascertain what they were; but receiving no instructions continued on his course. The impression which struck him when looking at the ships, was that they were wrecks, but he felt an inward desire to overhaul them, which he mentioned to Mr. Lynch, the only passenger on board, who, when the vessels were nearly out of sight astern, expressed an opinion to Mr. Simpson that they were Franklin's ships. He saw Mr. Lynch go down to Mr. Coward, but does not know the result of the interview on that occasion.

Thomas Davis states that there was no curiosity or interest evinced among the crew after seeing the vessels, but there were a great many icebergs seen, and they felt more anxiety for the safety of their own ship. It was his first trip to Quebec; had never seen icebergs before. It is his opinion that no one in the ship knew of any reward for the discovery of the missing expedition, and that he never knew anything of Franklin's expedition, until last January when at Plymouth.

The circumstance of a ship's crew being ignorant of the reward held out by government for the discovery of Franklin's expedition may at first sight

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appear incredible. In consequence I have made the most searching inquiry in this town if the reward ever obtained publicity; but even the principal merchants, the chief of police, the postmaster, the editor of the *Limerick Chronicle*, the Chambers of Commerce, and the tradespeople immediately connected with the mercantile community, brokers, and masters of Quebec traders—never heard of such reward being offered until the present moment.

I have had lengthened conversations with Mr. Lynch's uncle, Mr. Creilly, ship chandler, and his sister. They can both certify to the accuracy of the extract from their relative's letter which was published in the *Limerick Chronicle*, and which was purposely inserted for information, by the advice of a friend of Mr. Creilly, to whom he showed the letter. Mr. Lynch is a person of intelligence and good education. In his youth he passed three years at sea, and since has been engaged in business and agricultural pursuits. While employed under the Board of Public Works as a pay clerk, he received a reward for his gallant conduct in defending himself against a party who attacked him for the purpose of robbing him of about £2,200 of government money under his charge, which he was instrumental in saving. This gentleman appears to have manifested more curiosity and interest respecting the two ships than any other person on board the *Renovation*, for during the remainder of the voyage he had frequent discussions with Mr. Coward on the subject, which vexed him, feeling that he ought to have searched the vessels.

On arrival at Quebec he remained two or three days on board the *Renovation*, during which time he asked Mr. Simpson to accompany him, and return to the search of the two ships.

I submit that this gentleman may be communicated with, as his information will probably be very useful in stating all that transpired: he is now residing at Prescott, in upper Canada—his name is John Supple Lynch.

It is a matter of some importance to know that the position of the *Renovation* as first reported appears incorrect, and that she was considerably to the northward of her reckoning (about eighty miles), which will bring the ice on which the ships lay, nearly on the 47th parallel; this fact is clear, from the circumstance that the *Renovation* was nearly run on shore, owing to this error. About 10 P.M. of the same day, when the ships were passed, Mr. Simpson was called up suddenly by the second mate reporting a light. On reaching the deck, a lighthouse (which must have been St. John's) was only three or four miles distant; they immediately hauled to the wind, and put about on the starboard tack. The following day they were set right by a French brig as to their position; they bore up, the wind having changed to the north-east, after running along the coast they rounded Cape Race, at about 2 P.M. Mr. Simpson states the course steered from the ships was about W.b.N. (true), and running at the rate of six or seven knots for fourteen hours. With this *data* the position of the ships where seen is assumed to be E.b.S. of St. John's, about ninety miles. Soundings had been tried for on the previous day with 60 fathoms of line. A tracing of the assumed position of the ships is herewith transmitted.

In the absence of the log, Mr. Simpson is unable to furnish any dates. A considerable number of icebergs were passed the day previous to seeing the ships, and there were many in sight at the time. I also ascertained that the *Jessy*, of Limerick, passed through a chain of bergs on the 16th of April, 1851, about the same meridian as the *Renovation*, but further to the southward.

I have endeavoured to ascertain from Mr. Daniel Gorman, the most experienced seaman in this port, who has been employed in the American trade since 1809, and employed under the same owners here in command of vessels since 1829, such information as may bear on the point, to show the drift of the current and icebergs near the banks of Newfoundland. I beg to enclose it.

On reaching the Gulf of St. Lawrence, the *Renovation* was detained by the ice for several days with the other ships bound to Quebec at that time, which is mentioned in Mr. Lynch's letter. The second mate and several of the crew ran from the vessel at Quebec. Although Mr. Simpson is satisfied that each vessel had three masts, but, owing to the distance, he cannot affirm whether they were ships or barques, from the same circumstance he can give no satisfactory answer to the other details respecting their fittings, except he is very

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clear that the vessel with her yards up had no sails bent; and, respecting the boats, there were none suspended to davits or to be seen outside the ships.

Whatever ships they may have been, whether Franklin's or not, the fate of the crews must be a subject of public sympathy, and many surmises will result. My firm conviction is that those vessels drifted a considerable distance on that piece of ice; from the description given, I cannot denominate it a berg, the most elevated part being no more than 30 or 40 feet high, while it was five miles long, which appears very like a portion of a heavy floe, with a hummock upon it. From the fact of being found drifting with the current, which sets along the coast of Labrador from Davis Straits, I infer they came from a high northern latitude. The removal of the spars, and absence of the boats, indicate that the abandonment of the ships had been a work of time and deliberation. The fact of the ships being close together has the appearance of their being consorts.

If the hulls were in a floating condition, when released from the ice, there is yet a chance that they may be fallen in with some day, as timber ships have drifted to the coast of Portugal and the Bay of Biscay.

I have spared no pains to obtain every particle of information on this important circumstance; and it is to be deplored that no measures were taken to examine the vessels: it appears to have been a subject of deep regret on the minds of Mr. Coward and Mr. Simpson ever since, and Mr. Lynch was strongly impressed with the idea that they were Sir John Franklin's ships.

In this investigation I have received the co-operation of Commander J. J. Palmer, Commander William Ellis (a), and Captain William Caldwell, Inspector of Police for the county of Limerick, who have rendered me every assistance in their power. Mr. Simpson has shown every desire to give all the information which he is now enabled to do, and I have every confidence in his candour and integrity.

I have the honor to be, Sir,
Your very obedient Servant,
ERASMUS OMMANNEY, *Captain R.N.*

Now to doubt that these ships were really seen as stated would be to set at nought the testimony of two respectable persons, supported by the seamen of the watch; none of whom could possibly have any motive to mislead the world. And the circumstance of such an event not having been reported long ago only adds to the appearance of truth which pervades the whole account. Well indeed may it form a matter of wonder to some, how vessels could be passed under such circumstances, were it not that the commander of the merchant ship has the main object of his voyage only before him. The *Renovation* had a fine fair wind, and her commander was unwell; the scene of the wrecks on the ice was not before his eyes, even the circumstance of a reward offered was unknown to him, and perhaps all on board; the object of his voyage *was* before him, and how much easier was it to pursue that, leaving everything alone, than to encounter danger in reconnoitring or examining mere whaler wrecks?

And of whaler wrecks it is very well known that three took place in 1849. None are stated to have taken place in 1848, 1850, or 1851. It is also said of those of 1849, that they were fairly overwhelmed by the ice and abandoned by their crews, who reaching the Danish settlements on the west coast of Greenland, were brought home by a Danish vessel and landed at Hull in October 1849.

There is however a feature in the account of the ships reported by the *Renovation* which will not fail to occur to the mind of the seaman,

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and is that to which we alluded as unobserved by the landsman inexperienced in nautical matters. *These ships are dismantled aloft*, one even to leaving her lower masts only standing, and the other with nothing above her topmasts and no sails on her yards. Such a process as that of stripping a ship aloft must have been deliberately done, why we need not enquire. But are whalers left thus when they are abandoned by their crews in case of being nipped, do they stop to dismantle aloft; or do their crews leave them and make their escape on the ice as fast as they can.

Since the above was written the following has appeared in the *Dumfries Courier* with which we shall conclude our observations. The Esquimaux sketch will be found in our volume for 1849, page 603, and is an extraordinary coincidence with the position of one of the ships.

With reference to the account of two ships having been seen upon a floe of ice on April 20, 1851, one cannot without feelings of the deepest regret lament that every possible exertion had not been made by the parties so favoured, to have at once investigated them more closely; as, if ships were seen at all, of which there appears but very little doubt, it would not have been difficult to form something beyond a conjecture as to what ships in such a position they really were. Log-books kept up to the day the vessels were abandoned, letters or other documents, would have been found, which would at once have pointed to where the crew ought to be looked for, or, at all events, have given intelligence of their fate.

The description given of the difference of size would, in my opinion, at once confirm them to be those of Sir John Franklin, the *Erebus* and *Terror*. The former, although not above forty-five tons larger, had the appearance of being more than 100 tons more than the latter; and it would appear evident that they had remained in that position for a length of time, and had not been at once abandoned, as all that seamen could do had been done to relieve the one represented as lying on her broadside, namely, getting down her top-hamper, such as masts, yards, &c. For nothing was seen but the three lower masts and the bowsprit standing.

As a proof that these vessels were abandoned, the vessel sitting upright had her sails unbent, a circumstance which would not have been the case had the crew been on board; for in reaching such a latitude the temperature of the sea water is so high, that it would cause the most rapid decay on the ice, when the ships might be momentarily expected to settle down into the water. If, as we suppose, the ships were abandoned, when reaching the water they ought not to be expected to have floated many hours, as they could not have been forced up into such a position without sustaining very great injury. Such was the case with the *Terror* on a former occasion, March 16th, 1837, when she was forced into a precisely similar position entirely out of water, to the northward of Cape Comfort, where she remained 118 days, when the ice was eventually cut, and the ship again launched into the water. During this time she had altered her position, floating down the straits a distance of 200 miles, and would in all probability, had she not been cut down, have reached the Atlantic, if not the banks of Newfoundland. On such an occasion she would have immediately sunk, had the crew not remained on board. As it was, the pumps, besides taking every other precaution, were kept in perfect readiness, and the chain cables were got round the ship to keep her together.

We may suppose the ships to have been blown out of their winter quarters of 1845 (Cape Riley). The ice breaking up much earlier than might have

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been expected, which would appear to have been the case, by reports from that quarter brought by the late searching expedition—of things being found which had belonged to the *Erebus* and *Terror*, which would not have been left behind if they had not been unexpectedly hurried off; and most likely by E. or N.E. gales, which would have set them over to Cape Walker, where, getting into a more exposed position, and tideway, the disaster of having been forced upon the ice is then likely to have taken place. Moreover, from the circumstance of Dr. Rae having found a piece of a boat's mast and boat's awning stauncheon, both of which had belonged to one of H.M. ships, having upon them the government mark; in addition, the boat's mast having engraved upon it S.C., which, from its dimensions, shows it to have been the mizen-mast of the S.C. (second cutter) of one of the ships, each of them carrying three—first, second, and third cutters. Now, from finding this, it might be fairly supposed that something at this point may have befallen the ships, and that one if not more of the boats might have attempted to escape to the tract so well known to their gallant leader on former occasions, the most likely to be attended with the means of support. Or, we may ask, how came that mast into the position where Dr. Rae found it?

We may now look back into Barrow Straits, where the ships were, and suppose them forced upon the ice, and it taking its usual course—that of slowly drifting into Baffin Bay, down Davis Straits, and so on to the Atlantic.

In thus expressing such opinions we do not for one moment infer that there may be no hope; on the contrary, it would throw new light upon the expedition, and excite much greater hopes than ever of the survivors being discovered. And we doubt not, or sincerely hope that the matter may be so viewed by those in power as to cause the strictest search along the west shores of Davis Straits, more particularly the prominent headlands *(Cape Walsingham and Resolution Island, &c.,)* where they may find the very sails unbent from the *Terror's* yards forming houses over our poor unfortunate countrymen. We may hope that all would not have abandoned the ships until they were about to enter the Atlantic, where the greatest danger from such a situation would be expected.

We would call attention to the Esquimaux sketch of Sir J. Franklin's ships, forwarded to the Admiralty by Captain Parker of the ship *True Love*, on the 4th October, 1849, where one ship is represented upon her side. This will be found in the return of the Arctic expeditions, ordered to be printed by the House of Commons, March 5th, 1852.

Edwards' Patent Preserved Potato.—*Arctic Expedition.*

From the very favourable reports made in the previous expeditions upon the excellent qualities and use of Edwards' Patent Preserved Potato, and of its valuable *antiscorbutic* properties, we are glad to find a large quantity of this imperishable vegetable diet has been supplied for the ships in Sir Edward Belcher's expedition, and from the extreme portability, and facility in cooking this vegetable, by merely adding boiling water it is ready for use in a few minutes, and a great desideratum for the Arctic voyagers.

We subjoin a letter from Captain M. De Courcy, of H.M.S. *Helena*, bearing testimony of the keeping, and antiscorbutic properties of Edwards' Preserved Potato, in the tropics, and being eminently desirable for issue with salt meat.

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"Having lately been paid off from Her Majesty's sloop *Helena*, which vessel I commanded for upwards of three years on the West India Station. I bear willing testimony to the good quality of Edwards' Preserved Potato: it always proved good and nutritious, easily cooked, and independent of its being so useful as an antiscorbutic, it is admirably adapted for detached or boat service, and is very accommodating for stowage in small vessels, and above all, was decidedly a never-failing favourite with the ship's company, and was in marked contrast to the preserved meats. The Preserved Potato is eminently desirable for occasional issue *with salt meat*, and I found it most valuable as a dietary for the sick, and the crew upon fresh beef.

MICHAEL DE COURCY, *Commander, R.N.,*
Late of H.M.S. Helena.

Mr. Simpson, also, late Surgeon of the *Plover*, gives the same favorable opinion of it. He says:—

H.M.S. Plover, Behring Straits.

IT gives me great pleasure to bear further testimony in favour of Edwards Preserved Potato, in regard to its wholesome and nutritious qualities, and its beneficial effects as an article of diet in the prevention and cure of Scurvy. The *Plover* was supplied with a very large quantity in metal cases, which, after passing twice through the Tropics in the outward passage, and being on board more than three years; on being opened were found to have kept the Potato in a perfect state of preservation, and as good as when recently prepared.

JOHN SIMPSON, *Surgeon, &c.*

LOSS OF H.M. TROOP SHIP "BIRKENHEAD," OFF POINT DANGER, ABOUT SIXTY MILES FROM SIMONS BAY.—*From the United Service Gazette.*

HER Majesty's steam ship *Birkenhead*, Mr. R. Salmond, Master, arrived in Simons Bay from England, on the 23rd February, 1852, with several detachments for the forces now serving on the frontier, in all 630 souls. After coaling, she proceeded to sea on the evening of the 25th of February, the weather being fine and moderate. At 2 A.M., on the 26th, whilst going full speed, this ill-fated vessel struck on the rocks off "Point Danger," about sixty miles from Simons Bay, and in less than twenty minutes not a particle of her was to be seen. In vain did Mr. Salmond give the order to "reverse the engines;" the words were hardly uttered, when the ship, with one tremendous crash, parted in two, abreast of the paddle-boxes, the foremost part being instantly immersed in 7 fathoms water, consigning hundreds of unfortunate beings to a watery grave, who doubtless were drowned in their hammocks. Up to this moment, not a voice was heard save that of the Commander, but now the shrieks were truly heartrending. All the women and children being aft, were immediately placed in the first cutter, under charge of Mr. Richards, Master's Assistant, R.N., and removed from the wreck; while the second cutter and gig were stationed so as to render assistance when necessary.

Alas! the two paddle-box boats were swamped (when the vessel broke asunder), or they might have saved at least 200 more. The weight of engines and machinery, &c., causing the remaining portion of the unfortunate *Birkenhead* to sink stern uppermost, close to the rock, in 13 fathoms, a general scramble ensued for the boats, spars, yards, and every available piece of wood. During this awful scene, the binnacle struck Mr. Salmond's head; he instantly disappeared, but was afterwards seen on a small raft, his head

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resting upon his hands. The boats being filled, with about sixty of the survivors, steered for Simons Bay, and most providentially at 11 A.M., met the schooner *Lioness*, the captain of which, Thomas E. Ramsden, and his wife, did all in their power to alleviate their sufferings; took them on board, and returned to the wreck, where they found Mr. Hire, clerk, R.N., and forty-four soldiers and marines, clinging to the main-top-sail-yard, having been in that wretched condition upwards of thirteen hours—hungry, parched, and well-nigh completely exhausted. These all received every kindness and attention on board the *Lioness*, which welcome little vessel was hailed by Her Majesty's steam sloop *Rhadamanthus*, near to Cape Point, and towed into Simons Bay, on the night of the 27th February, with 116 men, women, and children, rescued from the boats and top-sail-yards.

Commodore Wyvill, commanding-in-chief, lost not a moment in rendering every possible assistance—having during the afternoon of the 27th been apprised of this dreadful catastrophe by the Assistant-surgeon Culhane, R.N., who reached the shore in the gig with eight of the crew, and rode ninety miles across the flats. *Rhadamanthus*, with as many boats as were available, proceeded (after bringing the *Lioness* to her moorings) to "Point Danger," but finding no necessity to remain there, approached Walkers Bay, whence she returned on the morning of the 1st March, with sixty-one more survivors, who, by means of rafts, life preservers, and other contrivances, managed to reach the shore. From the information given by the man at the wheel, it appears that the course of the unfortunate *Birkenhead, just before she struck*, was S.S.E.¼E., and the man in the chains stated that he then got soundings in 13 fathoms, but before another cast of the lead could be taken she was on the rocks, with 7 fathoms abreast the paddle-box, and 11 fathoms under the stern. Mr. Salmond judged the distance off shore, to be at least ten miles, whereas, it proved, alas! to be only two miles and a half. That there must have been a very strong current setting in is quite evident, because this was experienced to a considerable degree by the *Rhadamanthus* when she visited the spot the following day. But whatever the causes may have been that led to this most painful tragedy, their *effects* have, indeed, cast a deep gloom around us. Nothing, however, has been left undone that could tend to relieve the distresses of those who were saved from the wreck. A subscription was immediately sent forth, which was promptly and generously responded to by everybody in Simons Town. It is believed that 436 have been lost, the number saved being 194, amongst whom are the following officers, saved, in the three boats, viz:—Dr. Culhane, assistant-surgeon, R.N.; Mr. Richards master's-assistant, R.N.; Mr. Renwick, first class assistant engineer, R.N.; Mr. Hire, clerk, R.N.

The unfortunate *Birkenhead* was built at Liverpool by Mr. Laird, and we perfectly recollect the admiration expressed at her good qualities when she made her first experimental run on the Mersey, at the opening of the Birkenhead Docks in 1846,

Captain Stevens, of the Steam Department at Portsmouth, having reported most favourably of her, she was immediately brought into use, and after making some short trips to Cork, Lisbon, &c., in June last year, she conveyed the 1st Division of the 2nd Royals, under the command of Lieutenant Colonel Burny, from Queenstown to the Cape, and returned to England in the October following; and after being examined and refitted at Portsmouth at the beginning of the present year, she proceeded to Queenstown, and from thence to the Cape, with the following Drafts for the different regiments on the frontier:—

"2nd (Queens') Foot—Ensign Boyland, and 51 privates.
"6th Regiment—Ensign Mitford, and 61 privates.

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"12th Lancers—Cornets Bond and Rolt, and 6 privates.
"12th Regiment—Lieutenant S. Fairclough, and 71 privates.
"43rd Light Infantry—Lieutenant Girardot, and 41 privates.
"45th, attached to the 12th Foot—4 privates.
"60th Rifles, 2nd Battalion—41 privates, attached to 91st regiment.
"73rd Regiment—Lieutants Robinson and Boot, and Ensign Lucas, and 71 privates.
"74th Regiment—Major Seaton and Ensign Russell, and 66 privates.
"91st Foot—Captain Wright, and 61 privates.
"Staff—2 Surgeons and 1 Assistant-Surgeon.
"Total—12 officers, 472 rank and file, 2 surgeons, 1 assistant-surgeon, 25 women, and 31 children; 3 women died in childbirth, and 1 of consumption on the passage, and 3 births had taken place."

The following letter to the Secretary of the Admiralty details this unhappy occurrence.

"*Castor, Simons Bay, March* 3.

"1. Sir —It is with much pain I have to report, for the information of my Lords Commissioners of the Admiralty, the disastrous wreck of Her Majesty's steam troop ship *Birkenhead*, on the morning of the 26th of February, at two o'clock, on the reef of rocks off Point Danger, about fifty miles from this anchorage, by which catastrophe I lament to state, that the lives of 438 officers, (naval and military,) seamen, soldiers, and boys, have been lost, out of 630 who were on board the ship at the time. The circumstances, as far as I can collect, are as follows:—

"2. The *Birkenhead* reached Simons Bay, from Cork, on the 23rd ult., in forty-seven days. She was immediately prepared for sea, received coals to 350 tons, some provisions, and the officers' horses, disembarked the women and children (except those taking a passage to Algoa Bay), and was reported ready on the 25th. That afternoon Mr. Salmond received the Government dispatches for his Excellency Sir Harry Smith, my orders to proceed to Algoa Bay and Buffalo Mouth, to land the drafts of the different Regiments, and steamed on his passage at six o'clock in the evening, which was fine and calm, with smooth water

"3. At half-past two o'clock on the afternoon of the 27th of February, Mr. Culhane, Assistant-surgeon of the *Birkenhead*, arrived at Simons Town by land, to report to me the loss of his ship near to Point Danger—that two boats, with, as he stated, the only survivors, were cruising about at a distance from the land. I immediately despatched Commander Bunce, of Her Majesty's ship *Castor*, with twenty-five men (to form boats' crews) in the *Rhadamanthus*, the only steamer in port, to the scene of the wreck. That evening he fell in with the schooner *Lioness*, of Algoa Bay, Mr. Ramsden, Master. This vessel had on board the persons who were in the boats, and forty others, whom they had succeeded in taking off the main-top-sail-yard of the ship, which was the only visible part of the wreck above water, altogether 116 in number, as per lists. It being calm, and the schooner some distance from this anchorage, the *Rhadamanthus* towed her in, and afterwards proceeded to Point Danger, in search of any people who might yet be clinging to the spars and pieces of wreck floating about; also for any who might have landed. An examination of the coast having been made for upwards of twenty miles by land and sea, and no other persons being found, except those who had landed during the night and day of the wreck on Point Danger, the *Rhadamanthus* received them on board, and returned to this port on the morning of the 1st instant. The persons so saved were sixty-eight in number, of whom six were officers (four military and two naval). They reached the land by swimming, and on pieces of wreck, &c. These, with nine others,

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who escaped in the gig, and were rescued by the schooner, make the total saved 193.

"4. It appears that Her Majesty's ship *Birkenhead* was duly pricked off on the chart at eight o'clock on the night of the 25th, within False Bay, by the Master, Mr. Brodie, and officer of the watch, Mr. Spear, Second Master; that the course was shaped S.S.E. ½ E., and Cape Hanglip giving a berth of about four miles. The man at the wheel, John Haynes, A.B., from ten to twelve o'clock of the first watch, states that he steered that course, with directions not to go to the eastward of it. A leadsman was on the paddle-box, and look-out men were placed. The night was fine, starlight, and calm but a long swell setting in on shore. The land was seen all the night from three to four points on the port bow. At about ten minutes before two o'clock, in the middle watch, the leadsman, Abel Stone, ordinary seamen, got soundings in 12 or 13 fathoms, of which he gave notice to the officer of the watch, Mr. Davis, Second Master. The ship was going about eight knots. Before he could get another cast of the lead the ship struck, and he found seven fathoms alongside; there were 2 fathoms of water under the bows, and 11 by the stern.

"5 It appears that Mr. Salmond, who was roused by the shock, went on deck, inquired the time, a few minutes past two o'clock, and the course steered; it was reported to be S.S.E.½E., which he stated was quite correct. He immediately ordered the engines to be stopped, the small bower anchor to be let go, the quarter-boats to be lowered and lie off alongside the ship, the paddle-box boats to be got out, and a turn astern to be given by the engines. He ordered the military officers, who were all in attendance (Major Seaton, of the 74th Regiment, and Captain Wright, of the 91st), to send the troops to the chain pumps; the orders were implicitly obeyed, and perfect discipline maintained. So soon as Mr. Salmond heard there was water in the ship, he directed the women and children to be put into a cutter, in charge of Mr. Richards, Master's Assistant, which was done. In ten minutes after the first concussion, and while the engines were turning astern, the ship struck again under the engine-room, bulging the side in several feet, and tearing open the bottom; the water rushed in, drowned the fires, and stopped the engines; the engineer, Mr. Renwick, and stokers, making their escape to the upper deck. Instantly the ship broke in two abaft the main-mast and sank, leaving the main-top-mast and top-sail-yard only visible above water. Up to this awful moment the resolution and coolness of all hands were remarkable. Mr. Salmond gave his orders with much presence of mind to the last. The three boats, which had stayed by the ship, now left her to seek a landing or to save themselves, and at daylight they were out of sight from the wreck. The two cutters were picked up by the schooner *Lioness*, and the gig landed, with eight men and Mr. Culhane, at Port D'Urban.

"6. Having called upon the surviving officers for their statements of the circumstances attending the loss of this ill-fated ship, I have now the honor to lay them before their Lordships for their information, together with lists of the people saved; but I regret that I cannot furnish the names of the unfortunate individuals who have been drowned on this most malancholy occasion, as the muster-books and rolls have been lost.

"7. There is no doubt but the course of the ship was shaped to hug the land too closely; and, it does not appear that either Mr. Salmond or the Master had attended on deck from ten o'clock in the first watch until the accident occurred, it would infer much inattention and extreme neglect of duty on their parts; and, when soundings were first struck, had the helm been put to port, this ill-fated ship might have escaped the danger. It is much to be lamented that not an officer has been saved who can give any satisfactory information upon these points.

"8. It is also to be deeply deplored that a young officer, Mr. Richards,

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Master's Assistant, should have been the only executive in command of the boats; as, from the circumstance of their leaving the scene of the wreck before daylight, the landing-place discovered on Point Danger by those who reached the shore on rafts would have shown itself, and the hapless individuals who were clinging to pieces of the wreck and spars, might have been picked off and carried to the shore by the boats, and thus many more lives would have been saved. Also, when the schooner visited the wreck, had the cutters examined the coast in the locality, it is probable they might have found a few others. I can only attribute this fatal error to want of judgment, and to the excited state of the people in the boats under such appalling circumstances.

9. Captain Wright, of the 91st Regiment, who landed on a piece of the wreck, lost no time in procuring and sending assistance to his fellow-sufferers. He walked several miles along the coast, obtained the use of a whale-boat, and returned again, to give all relief in his power, taking charge of all who landed. The Civil Commissioner, Mr. Mackay, and a Captain Smales, residing near Stamford's Cove, were most hospitable and active in clothing and feeding the poor fellows as they reached that place. To Mr. Ramsden, the Master, I have expressed my thanks for his humane kindness and exertions in proceeding in his schooner to the wreck, and saving the people who were clinging to the top-sail-yard. Commander Bunce, with the boats, though too late to save life, by his activity prevented a long and painful journey to the sufferers, and succeeded in embarking and bringing them to this port in the *Rhadamanthus*.

10. From the deep water and dangerous position in which the wreck has sunk, I do not entertain any hopes of recovering anything of value; but I have sent Commander Bunce, by land, to the vicinity, to recover and dispose of the property as he may think best, an account of which I will send their Lordships by the next mail.

11. The soldiers will shortly join their respective Regiments, and I purpose sending the remaining officers and crew of the late *Birkenhead* to England by the first opportunity (Her Majesty's ship *Amazon*, which arrived here last night, and will sail about the 12th instant), to be dealt with as their Lordships may see fit.

12. I am glad to state that subscriptions were immediately raised to relieve the distress of the unfortunate widows and children of the soldiers, who are comfortably housed in the Barracks at this place.

I have the honor, &c.,

C. Wyvill, *Commodore.*

I have deemed it advisable to intrust this dispatch to Mr. Freshfield, the late Clerk of Her Majesty's steam ship *Birkenhead*, who, from his knowledge of the circumstances, though not present at the wreck, having been left behind at my residence sick, will be able to give their Lordships every information, and particularly as to the names of the drowned officers, &c. It will also enable the accounts of this unfortunate ship to be closed.

C. Wyvill, *Commodore.*

J. Parker, Esq., Secretary to the Admiralty, &c., London.

Nautical Notices.

Revolving Light on the South Point of Barbados.

Notice is hereby given, that Her Majesty's Government has established a Revolving Light on the south point of the Island of Barbados; and that it was to be displayed on the first of this month.

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The base of the tower is fifty-five feet above the sea, from which it is 200 yards distant, and stands in lat. 13° 2′ 45″ N., and long 59° 33′ 30″ W. of Greenwich. The tower is ninety feet high, and is painted in alternate Red and White bands, each being seven feet and a half in depth.

The light is thus 145 feet above the level of the sea, and revolves once in every minute; after an eclipse of fourteen seconds, it again appears, gradually increases for twenty-four seconds to its greatest brilliancy, and then in twenty-four seconds more is eclipsed.

From the light, Seawell Point bears about N.E.b.E.¼E.. and Needham Point W.N.W¼W.; and except from between the opposite bearings, the light is visible in all directions from the deck of a vessel within the distance of eighteen miles.

Vessels approaching the island from the eastward are recommended not to run down their longitude to the northward of 12° 55′ N.; and as soon as the light is discovered to bring it to bear west; steering from thence W.b.S. and and not passing it at a less distance than two miles.

If coming from the north-eastward the light will not be visible until it bears to the westward of S.W.b.W., being concealed by the high land forming Seawell Point; and if kept in sight well open of that point, it will lead clear of the Cobblers, a group of dangerous reefs which extend some miles from the eastern side of the island. Mariners are advised to give them a wide berth, on account of the prevailing current to the westward.

When the light is brought to bear north-east, a course may be shaped for Needham Point; but in hauling up into Carlisle Bay, that point should be kept at the distance of a third of a mile.

Fixed Lights in the Strait of Sunda.

Her Majesty's Government has been officially informed that on the 28th of last November, a Fixed Light was established by the Netherland Government on Fourth Point in the Strait of Sunda.

The tower, which is built of stone, stands on the sea beach nearly three miles from Anjer, in 6° 4′ 50″ S., and in 105° 56′ 35″ east of Greenwich.

The light is displayed at an elevation of ninety-four feet above the level of the sea, and may be seen in all directions from the deck of a vessel at the distance of sixteen miles.

Revolving Light on Dragonera Islet, off the West End of Majorca.—Her Majesty's Government has been officially informed that on the 20th of last March, a revolving light was established on the central Peak of Dragonera Islet, off the western end of Majorca.

The Tower stands in 39° 37′ 50″ N., and 2° 20″ E. of Greenwich, and displays, in all directions, a bright light once in every two minutes, at an elevation of 1180 feet above the level of the sea; and can be well seen at the distance of eighteen miles.

Fixed Light on San Felipe Point, Port Mahon, in Minorca.—A fixed light has also been placed by the Spanish Government on the remains of San Felipe Castle, at the western side of the entrance to Port Mahon.

The Tower stands in 39° 50′ 28″ N., and 4° 22′ 48″ E. of Greenwich, and about 137 yards from the extremity of San Felipe Point, from which a reef extends two-thirds of a cable's length.

The light being elevated seventy-four feet above the sea, is therefore visible from the deck of a vessel at the distance of thirteen miles, and in all directions except were screened by the land.

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TROMELIN ISLAND AND ACORN SHOAL.—*Extract of a letter from Commander H. Parker of H.M.S. Pantaloon, dated 5th October*, 1851.

It would seem that the shoals laid down in the old plan on the south end of Tromelin Island, had risen or grown above the level of the sea, as at present the island is nearly steep to, with the exception of a break at the south-west corner, and a bank of soundings extending nearly a mile and a half from the north end of the island. On this last three-quarters of a mile off shore, soundings ranging from 7 to 12 fathoms are found, sand and large coral rocks; very indifferent holding ground, but with the south-east monsoon it is under the lee of the island: in standing over the bank the bottom is clearly visible.

A heavy race is formed by the meeting of the ebb tide and the westerly currents off the north end of the island, and often breaks in a manner dangerous to boats at a distance of a mile off shore. The island is surrounded by a reef, or rather a ledge of coral rocks, ranging out from the beach 150 yards or more, on which the sea breaks heavily. The bottom being all rock and very rugged no boat can land without an almost certainty of being stove, except at the spot marked *(a)* close to the eastward of the north point. Here it is a steep beach of sand clear of rocks for a short distance; and although on the weather side of the island by watching an opportunity a chance of landing tolerably smooth may be had near high water. The current setting along this beach to the northward is very strong, with the ebb it would carry any boat upset in the surf into the race, where they would be in great danger.

The northern half of the island is the highest, and is covered by low bushes not above four or five feet high, and some coarse grass and weeds. The southern half is very low, with some grass but no bushes. On the most elevated spot on the north end of the island, are the remains of a building of coral rocks of a very old date; it contains five compartments, and close to are two more square ruins.

In the neighbourhood are several rows of stones about six feet in length, apparently graves.

I endeavoured to dig into one with a piece of wood, and found some nails, &c., but having no spade could not penetrate to any depth.

I found no human remains, marks, or inscriptions on the ruins, I suppose these are so old that any such vestiges have long been obliterated.

On the west or north-west side of the island are two large anchors in the surf, and eight guns very much corroded, all marks worn off, parts nearly oval, and the trunnions like a shark's fin. The anchors are the old pattern, long shanks, and large rings, and apparently very heavy, but I was unable to get at them on account of the surf. The guns (of which one has apparently been carried up the bank above high water mark,) are old pattern twelve-pounders, of eight feet six inches in length, and very heavy, above thirty hundred weight. Some remains of iron work, as chain plates were scattered about, and I could discover no trace whereby to identify the wreck, which I should think cannot be of later date than fifty years back, and probably is much more ancient.

The island was swarming with birds congregated there for the breeding season.

SHOAL PATCH NEAR ACORN SHOAL.

At 7 A.M. on the 2nd of September, when cruizing off Point William just out of sight of the land, had suddenly a cast of 7 fathoms; the weather being fine I immediately anchored, and proceeded to examine the shoal. The

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least water was a little over 4 fathoms, it being rather more than half ebb, so that I do not think there would be more than twenty-two feet at dead low water. There were several knolls with $4\frac{3}{4}$, $4\frac{1}{2}$, and 5 fathoms. The extent of that portion of the shoal of which there is less than 10 fathoms water, is about one mile and a half east and west, and three-quarters north and south, bottom coral and sand. The latitude of the centre 17° 44′ 15″ S., long. 37° 56′ E.

At 8 A M. on the 3rd with a light westerly breeze weighed, and stood to the eastward: after getting off the shoal I carried from 25 to 31 fathoms water till noon, when I again got into 12 fathoms, and anchored about four miles and a half from the eastern end of the other. The centre of this is in lat. 17° 42′ 30″ S., and long. 38° 1′ 45″ E. The least water I found on it was 6 fathoms at about low water.

I proceeded from here to Fogo where I anchored, and got sights on the 8th and 9th, in order to place these shoals accurately, relatively to Fogo. On the 17th in company with H.M. brigantine *Dart*, searched for and anchored on the Acorn Patch, the centre of which I consider to be in lat. 17° 38′ S., and long. 38° 9′ E.

I enclose a sketch of these patches as placed by chronometer, relatively to Fogo Island; using Owen's longitudes, the corrections not applied.

I am, &c,,

HYDE PARKER, *Commander.*

THE MERCANTILE MARINE ACT.

As the Mercantile Marine Act has now been in operation somewhat more than a year, it will be interesting to our readers, no doubt, to learn something of its effects. Many of our correspondents are aware, that the Masters and Mates of the Merchant Service have, for the last year, been subjected to an examination in navigation and seamanship before examiners under Local Marine Boards, established at the large seaport towns of the United Kingdom, by the Board of Trade: and, that, in addition to the above mentioned qualifications, the masters and mates are required to produce testimonials of good conduct, and of a certain amount of servitude, before they are permitted to undergo the examination for the several capacities in question; and that on passing the examination satisfactorily, the applicants receive a certificate of competency from the Board of Trade, which in appearance is very similar to the parchment commissions issued by the Admiralty to their commissioned officers.

These examinations have, we are happy to find, given general satisfaction, and the certificates are in great estimation. Teachers for the preparation of applicants about to be examined are now to be found in the various seaports, and the numbers who pass, compared with those which are turned back, shew that they are on the whole, creditably informed before they come up.

The subjoined list will shew the working of this very useful system.

Table shewing the number of masters and mates who have been examined at the Local Marine Boards during the year 1851.

Masters Extra.		Masters Ordinary.		First Matss.		Only Mates.		Second Mates.		Total.		Grand Total.
Passed.	Failed.	Passed.	Failed.	Passed.	Failed.	Passed.	Failed.	Passed.	Failed	Passed.	Failed.	
88	19	1112	263	341	151	484	79	397	65	2422	589	3011

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From this it appears, that out of those who come up, only one fifth fail. The examination is not at all of a vexatious nature, being just what is absolutely necessary for each of the officers to know in their respective capacities. In a former volume we gave a statement of what was required of the candidates, and we now learn that the Board of Trade, in conformity with the notice they gave in their early instructions, are about to raise the qualification of the extra master, and the only, and second mates.

In looking over the table above, we are struck with the large proportion of masters ordinary who have passed; and in examining the qualification as to the reason, we see that it is so nearly the same as that of the first mates, that where the servitude will allow, it is no doubt, taken at once in preference to that of the mates. The reason of this very small distinction is evidently owing to the hardship it would be to prevent the masters, who could obtain command of small craft from so doing, by fixing a standard that would be above them, and evidently better adapted to the capacities of masters of large foreign going vessels. But this seems to be a defect in this part of the Act, in not making a distinction such as that of *First* and *Second* master, which would enable the Board of Trade to fix a low qualification for second masters, and a higher standard of examination for the first, an arrangement which would surely be more agreeable to the latter, and be better adapted to that class of masters who conduct our mercantile navy with so much credit to distant parts of the globe. Let us hope, that in any amendment or consolidation of Acts, this distinction may be made. It is with pleasure also we find, that arrangements are in progress for an examination in steam at the several large outports, of such officers who are in command of merchant steamers, as either themselves wish to be instructed in the use of the steam-engine, or whose owners wish them to be so. This very desirable arrangement has been some time in contemplation, but has only now been accomplished from the want of examiners. The various engineer surveyors, under the steam navigation acts, have now afforded a means of establishing these examinations, and they are intended to be, as abovementioned, quite voluntary, and will be attended with no expense beyond a small fee of 5s. on the certificate. The qualification will be only what is considered necessary to render a master, in some degree independant of the engineer as regards the working of the engine in case of his death or unwillingness to do his duty, or such as will enable him to detect any false statement that might be made to him with respect to the engine by the engineer, either for some purpose of his own, such as that of detaining the vessel in port or of obliging her to put into port to effect some slight repair, which could be done at sea, as was the case with a large steamer in the Mediterranean last year, to the great inconvenience of the master and owners.

It is to be hoped that the time is not very distant, when the engineers of the merchant steamers will be certificated as officers qualified to conduct their department, as is done with other officers in the merchant service, a wish which has been experienced by many engineers. This if carried out would have the effect of weeding such as are a discredit to the profession and would be an encouragement to the good and a sure passport to employment.

Among the various advantages of the mercantile marine act, there is none greater than that which enables the Board of Trade, to bring before a tribunal composed of shipmasters and shipowners, the conduct of the officers who are employed in conducting the vessels employed in the trade of the country.

Upon a representation to the effect that, a master or mate has been guilty of drunkenness or tyranny, or is from incompetency or misconduct unfit to discharge his duties, or has been guilty of repeated acts of dishonesty, the local marine boards can held a court and try the case and the Board of Trade on receiving the report may either cancel or suspend the certificate of such offender, which of course is a serious loss to the party, as he cannot serve at sea as an

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officer without a certificate. The Board of Trade has also power to suspended the certificate of any officer convicted of any misdemeanor, under the act, or of felony, or who has been sentenced to imprisonment, under any of the provisions of the act. And by means of naval and consular courts abroad, both merchant seamen and officers, may be tried for like offences and punished by either mulcting them of their wages, discharging them or sending them home in confinement, to be tried in this country. Some such discipline as this was loudly called for and we hope by the information we have received of the working of the act, that much benefit will ensue from the exercise of these powers. In the last year there have been tried by the Local Marine Boards in this country, thirteen masters and four mates, and by the naval courts abroad, eight masters, four mates, an engineer, besides seamen. Besides being deprived of the means of serving in any other capacity than that of a seaman before the mast, the officers, whose certificates are cancelled or suspended they have the disgrace of their sentence being published and their names noted in the mercantile navy list, a very useful publication in which the names of all certified masters and mates, are inserted after the plan of the Admiralty navy list, and which also contains the working staff, of the mercantile marine board, surveyors &c, throughout the country and other useful information. We shall conclude this notice of the working of the mercantile marine act, with expressing our satisfaction at the success which appears to have attended the measure, and our hearty wishes that the shipowners and local marine boards, may cordially co-operate with the Board of Trade in carrying out the objects of the bill, with spirit and effect.

Queen Adelaide Naval Fund.

We are very glad to have the opportunity of calling the attention of our readers to the proceedings of this valuable and useful fund, which has now been in existence during the last two years.

It was established upon the death of the late lamented Queen Dowager, and its object is to afford relief to such orphan daughters of naval and marine officers, as shall be reduced to circumstances of distress and need. The many heart-rending appeals which constantly attract the notice of the charitable and humane, must prove beyond a doubt, how frequently the naval officer is snatched away from useful and active life, by unforseen calamity and sudden death, without the opportunity of making any adequate provision for his family, who must then be left dependent on his widow with her scanty pension, scarcely finding them at best with daily bread.

How then are these to be set forward in the way of being able to assist their parent or maintain themselves, excepting by the means of this and similar societies coming forward in their hour of need. Their claim at least can scarcely be denied by those who feel their sense of obligation to those gallant men, whose death frequently becomes the issue of their generous deeds.

As yet its means have proved but little adequate to meet the many and distressing cases that solicit daily aid, we therefore confidently hope, that not the naval service only, but the public at large, will now come forward to afford their liberal support.

It is proposed to hold a bazaar in aid of the fund, in the month of June or July next, and the committee earnestly solicit contributions of fancy and useful needlework, drawings, and paintings; any such will be thankfully received by Mrs. Skyring, Somerset House.

Sailors' Homes.

Captain W. H. Hall (*Nemesis*) has had an interview with His Grace the Duke

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of Northumberland, at the Admiralty, on the subject of "Sailors' Homes," when the noble and gallant Admiral entered most minutely into the details, working, and management of those excellent institutions. His grace being intimately acquainted with the economical arrangements adopted at the naval schools and other public establishments, suggested to Captain Hall several improvements which will be made. He also thought the charges made to the seamen rather too high, and he expressed a hope that they might be reduced, which will, no doubt, be soon effected, more especially when we record such princely donations as £200 from his grace the noble and gallant First Lord, and £100 from that generous and philanthropic gentleman Charles Dixon, Esq., of Stanstead Park, Hants, (being his third donation) in aid of the funds of the Portsmouth Sailors' Home. His first donation was, we understand, £20, his second £30, and now, having the satisfaction of seeing how extremely well the establishment progresses, he has sent the princely donation of £100.

The noble duke at the head of the Admiralty, by visiting the "Sailors' Home" at Portsmouth, which he did a few days ago, and inspected it most minutely with Sir Thomas Herbert, *will do much good for the cause* of those long wanted and most useful institutions for our seamen. For who can visit them, and doubt but that they contribute much to the seaman's comfort and protection? and must assist in attaching those gallant and useful men more, not only to the naval service, but to their native land. Mr. Montague Gore, in his excellent pamphlet lately published on the subject, says—

"The British sailor may be considered, to a great extent, as the representative of the character of his countrymen throughout the globe. The commerce of England will become, let us hope, the means of evangelizing all nations.

"From East to West triumphantly she rides,
All shores are water'd by her wealthy tides,
The Gospel's sound diffused from pole to pole,
Where winds can carry, and where waves can roll.

"But vain will be all efforts to diffuse Christianity, unless the purity of its doctrines is exemplified in the lives of its professors. As regards, then, the honour of England in distant climes, as regards, if I may so express myself, the character of Christianity—as regards the efficiency of those attempts which are now making to spread the Gospel in foreign parts; it is of the highest importance to rescue the sailor when on shore, from those sinks of iniquity to which he is liable to be seduced. Every seaport, too, has a direct interest in the improvement of the character of the seamen who frequent it; and whose example must exercise considerable influence on the rest of the community. To the shipowners, as well as to their men, the "Homes" cannot fail of proving in the highest degree advantageous. Their ships are now often manned by men upon whom, when at foreign ports, little or no dependence can be placed. They care little about the ship in which they sail; they are heedless as to what port they shall return; but the establishment of "Homes" will induce those who have experienced their advantage, to be desirous of returning to them. It will render the seamen better men and better citizens; and it will cause them to continue with their masters. It will be impossible, in fact, to elevate the character of the seaman, without at the same time, benefiting all classes of the community; and conferring a boon upon the whole country."

NOBLE CONDUCT.—On the 5th instant, on board the *Trafalgar*, 120, Captain Greville, when going very fast through the water, and with a heavy sea running, a naval cadet of the name of Sheepshanks fell from the stern gallery. Mr. Skead, second master, who happened to be in the gun-room at the time, hearing the cry of "A man overboard," without hesitation leaped from the gun-room port with a chair in hand, and immediately swam in the direction of his drowning shipmate. His intention was at the same time anticipated by Mr. Lambe, a midshipman of the ship, who sprang into the sea from the poop, a height of some forty feet. A boat was lowered, but in the meantime the two gallant young men had reached their messmate, and succeeded in keeping him afloat till a more effectual aid had reached them.

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New Charts.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry.

	s.	d.
England, Liverpool Bay, corrected to November, 1851	2	6
Ireland, Long Island and Baltimore Bays, *Com. Wolfe, R.N.*, 1850 ...	2	6
Yucatan, Laguna de Terminos, *Lieut. G. B. Lawrence, R.N.*, 1850 ...	1	6
South America, Barbara Channel, *Capt. P. P. King, R.N.*, 1829 ...	0	6
East Indies, Royalist Harbour, South Natunas, *Lieut. D. M. Gordan, R.N.*, 1848	0	6
,, ,, Newcastle Harbour, Austrilia, *Capt. J. L. Stokes, R.N.*, 1851	1	6

Edward Dunsterville, *Master, R.N.*

Hydrographic Office, April 22nd, 1852.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory From the 21st of March, to the 20th of April. 1852.

Month Day.		Barometer. In Inches and Decimals.		Themometer in the shade.				Wind. Quarter		Strength		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min	Max	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
		In Dec	In Dec	°	°	°	°						
21	Su.	30.16	30.16	43	56	32	57	SE	S	4	3	b	bc
22	M.	30.12	30.14	50	62	37	63	S	SW	2	3	bc	bc
23	Tu.	30.08	30.04	45	62	34	64	E	S	1	1	bcf	bc
24	W.	29.90	29.94	43	49	33	57	SW	NE	1	6	bm	qog
25	Th.	30.02	29.98	38	44	29	45	NE	NE	3	3	bc	bc
26	F.	29.86	29.81	37	43	33	44	N	N	3	2	bc	o
27	S.	29.64	29.60	39	43	28	44	SW	W	1	1	bc	og
28	Su.	29.64	29.66	35	46	24	47	N	E	2	2	bcm	bcm
29	M.	29.56	29.46	46	52	37	53	E	E	2	4	bm	or 4)
30	Tu.	29.23	29.27	53	54	43	55	S	SW	5	5	qo	qo
31	W.	29.55	29 61	46	47	44	48	NE	NE	2	3	o	op 4)
1	Th.	30.05	30.13	42	50	39	51	NE	E	3	3	o	o
2	F.	30.30	30.31	40	46	30	48	NE	E	2	4	bc	b
3	S.	30·33	30.32	41	49	27	50	E	NE	5	4	qbc	b
4	Su.	30.19	30·17	41	49	31	51	E	E	3	3	bcprs 2)	bc
5	M.	30.14	30 13	46	59	34	58	NE	NE	2	2	bc	bc
6	Tu.	30.15	30·12	42	56	35	53	N	NE	2	2	of	o
7	W.	30.18	30 18	43	47	39	49	NE	NE	4	3	op (1 2)	o
8	Th.	30.27	30.24	43	51	39	53	NE	E	5	3	qbc	bc
9	F.	30.32	30 30	45	53	33	54	NE	NE	2	2	o	bc
10	S.	30.30	30·24	39	55	29	57	N	NE	1	1	bc	bc
11	Su.	30,18	30·19	45	52	33	53	NE	E	2	4	of	b
12	M.	30.27	30.27	46	52	39	55	NE	E	2	3	bc	b
13	Tu.	30.33	30.31	44	62	33	63	NE	E	2	2	bcf	b
14	W.	30.26	30.23	50	70	35	71	NE	NE	1	1	b	b
15	Th.	30.20	30.16	47	55	35	57	NE	E	3	3	bc	b
16	F.	30.08	30.02	45	50	41	51	NE	NE	4	4	o	b
17	S.	29.95	29.87	41	53	30	54	NE	N	3	2	b	bc
18	Su.	29 80	29.89	48	44	41	49	NE	NE	4	2	op 2)	op (3
19	M.	30.08	30.08	39	44	34	45	N	E	3	3	bc	o
20	Tu.	30.12	30.10	40	54	30	59	W	W	2	2	b	b

March 1852.—Mean height of the barometer = 30·135 inches; mean temperature = 40·0 degrees; depth of rain fallen = 0·12 inches.

Hunt & Son, Printers, 6, New Church Street, Edgware Road.

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THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

JUNE, 1852.

On the Currents and Tides of the Southern Coast of Santo Domingo.—*By Sir Robert Schomburgk.*

On a former occasion, I sent you some remarks on the currents and tides on the coasts of the Island of Santo Domingo; and I beg now to add some observations, which Captain Sleeboom, of the Hamburgh brig *Wilhelmina* has communicated to me. It may be as well first to remark that—

The trade between Great Britain and the Dominican Republic, has greatly increased since the establishment of a British Consulate in 1849; it surpasses now in tonnage, that of France and the United States taken together, by 800 tons; while the indirect or carrying trade in British vessels between this Republic and the United States, comes already within 230 tons of the American tonnage, cleared last year from Santo Domingo.

The principal articles of export from the south coast of Santo Domingo are mahogany, lignum vitæ, fustic, and logwood. More than half of these exports are shipped to Great Britain, and must be taken on board at the coast itself, as there are not sufficient coasters to carry the produce to the harbour of Santo Domingo. The war between the Emperor of Hayti and the Dominican Republic, now lasting already for eight years, employs almost every mariner of Dominican origin on board of the flotilla.

The charter-parties which are generally entered into in Saint Thomas, stipulate therefore, that the chartered vessel shall proceed in ballast to

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Santo Domingo, and from thence to sail for the coast to places, that are not noticed in any existing chart, and of the practicability or danger of which, the master can procure no information.

Every fact, therefore, that may facilitate the navigation of this somewhat exposed coast, or tend to lessen the dangers that exist, must be welcome to the navigator, until we possess accurate surveys of the whole coast of Santo Domingo. The presence of H.M. surveying vessel *Scorpion*, in the neighbourhood, gives hope that this great desideratum will be shortly accomplished.

Mr. Sleeboom writes on the 24th of November last, as follows:—"The observations on the currents and tides along the coast between the port of Santo Domingo and Petit Trou (Agujero Chico of the Spanish charts,) which I made during the fifty days, that I was recently anchored there, have proved to me that their direction differs considerably. During the *increasing* moon, the current sets regularly for twelve hours, with the flood towards the west, and twelve hours with the ebb towards the east. The ebb commences between 9 and 10 o'clock in the evening and the flood between 9 and 10 o'clock in the morning with a velocity of from three-quarters to one knot per hour. The flood rises at Petit Trou above three feet; at Nizao only two feet: The land breeze commences in the evening, between half-past 7 and 8 o'clock. I have observed that during a *decreasing* moon the flood sets uninterruptedly towards the west, and that there is no ebb at all, It runs then with a velocity of from one to two and a half-knots per hour. The weather is generally uncertain, and squally during that period.

"If a vessel should not be able to reach her destination, (being bound from the city to a place to the west), before evening, she would do well to keep a few miles to the east of her intended anchorage, for, should the land breeze be light, she runs danger of being drifted to the westward of her destination during night.

"Vessels destined for Petit Trou, ought not to draw more than ten feet when entering, for the passage to the anchorage has not *more than* thirteen feet of water;* and on approaching the reef, some of the sails should be taken in, to prevent the vessel going too quick through the water. The bottom is so clear, that usually every rock can be seen: the pilot stands on the bowsprit, and directs how to steer through the labyrinth of rocks that impede the passage, some of which are only six or seven feet under water. It is therefore necessary to have a clear and quick person at the helm, as the dangers are numerous. The anchorage of Petit Trou is not very good; the anchors hold only when lying against a rock.†

"There is very little land breeze. The wind was during the period of my lying at anchor there, from north-east until the afternoon; it

* There is a deeper channel for vessels outward-bound, with the breeze from the land, affording twenty feet of water.

† Petit Trou is under all circumstances a dangerous place for landing large vessels. The ship must be provided with good anchors and chains; the rocks are numerous within the reef where the anchorage is, and the sea sets frequently in with great velocity.

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then veered more to the eastward, as far as E.b.S., where it continued until midnight. At about two o'clock in the morning it commenced to blow again from the north-east."

In my former remarks on the currents, I have already alluded to the strong currents which set occasionally to the eastward, ascribing their cause to storms and gales in the Atlantic, and not to the influence of the moon. The following cases that have come under my notice, will corroborate my assertion. During the night of the 18th, to the 19th of August 1851, we had a severe revolving gale on this coast. Among other vessels, the *Jane Prouse*, of Liverpool, Alexander Ball, master, was lying in the road of this port. I extract the following remarks from her log-book.

"*August 18th*, at 11 P.M., (civil time) slipped the cable and stood due south; wind north; whole gale. At about 8 o'clock A.M., of August 19th, wind rounding to the south, (ship estimated to be then about fifty miles off the coast,) August 20th at 2 A.M., the wind became more variable and moderated. At 4h. 40m. P.M., wore ship to the northward; Island of Saona bearing due east by compass, distant six miles; kept her away, and set studding-sails for the city of Santo Domingo."

A current of great power had drifted the *Jane Prouse* considerably to the eastward. From the time she slipped her cable at the road of Santo Domingo at 11 P.M. of the 18th of August, to August 20th at 4h. 40m. she was apparently kept south. The wind blew from the north until 8h. A.M., of the 19th, when it rounded to the South. She was kept the closer to the wind, but found herself nevertheless 4h. 40m. P.M. of the 20th six miles west of Saona which lies eighty miles to the east of the road of Santo Domingo. The moon was during this period decreasing, having been full at Greenwich on the 11th of August at 9h. 43m. Astr. time.

The French brig *Malherbe* left the Bay of Nizao on Saturday the 25th of October, 1851, to round the point, for the purpose of anchoring at Boca Nigua, distant about ten miles to the north and east. She was overtaken by a squall with heavy rain, missed Boca Nigua, and found herself next morning at Guayacanes, having been drifted by the current forty-five miles to windward. The moon was then increasing, having been new moon at Greenwich, on the 24th of October at 3h. 10m.

The third example which I wish to cite, is that of the Prussian brig *Bertha* of Stralsund, which was off the harbour of Santo Domingo in the evening of the 8th of February last, but there being not sufficient daylight to enter, she was kept S.S.E. by compass, until midnight, when she wore, and stood in for the land N.N.W.; she found herself in the morning to the east of Punta Causedo, fifteen miles to the windward of the harbour of Santo Domingo. The moon was then decreasing, having been full at Greenwich on the 5th of February at 6h. 53m.

I shall endeavour to collect as much data as the little attention that is usually paid to such inquiries on board of merchant vessels, will permit. If on the occurrence of every easterly current along the south-coast of Santo Domingo, its origin could be properly investigated, it would be

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found that it arose from a storm or gale in the Atlantic, between the meridians of 20° and 40° W. The prevailing current near this coast remains, however the Carribbean or N.W.b.W. current. Last month afforded another instance of it. The brig *Campbell* of Liverpool, lost her boat off the River Nizao, and it was within a very few days afterwards picked up at Petit Trou.

ROBERT H. SCHOMBURGK.

Santo Domingo, March, 1852.

REVIEW OF THE HISTORY AND PROGRESS OF A SYSTEM OF PERMANENTLY FIXED LIGHTNING CONDUCTORS FOR H.M. SHIPS—FROM THE YEAR 1820, WHEN FIRST PROPOSED, TO THE PRESENT YEAR 1852, WHEN FULLY ADOPTED INTO THE PUBLIC SERVICE.—*By Sir W. Snow Harris, F.R.S.*

(Continued from page 257.)

14. The proposed application of a permanently fixed system of metallic conductors to the masts and throughout the hulls of H.M. Ships with a view to their effectual preservation from lightning, consists as we have seen (10) in completing the conducting power of the general fabric to the greatest possible extent, so as to bring it into that comparatively passive or non-resisting state it would assume, supposing the whole mass to be metallic throughout. This method of guarding ships from lightning evidently embraces the most advantageous form under which marine lightning conductors could be possibly applied, for it must never be forgotten in our reasoning upon this question, that the material of the masts and hull of a ship is already what may be termed a conducting substance up to a certain point, that is to say it can always transmit a large quantity of electricity under a current form. (9) Now by incorporating with this material continuous and capacious lines of metal, that is by making our conductors an integral part of the ship itself, we enlist as it were into the service, the conducting power which the masts and hull already possess, by adding it to that of the metals, and thus convert into an auxiliary source of safety, what might otherwise become a source of damage. The masts especially, as is evident, are calculated by their mere position alone to determine the course of electrical discharge through the hull, and will always do so under any circumstances to a greater or less extent, even though a conducting chain be applied to the rigging. The position in which the masts are necessarily placed is therefore so far a perilous one, and unless their conducting power be fully completed by the aid of metals, damage may arise. No temporary form of conductor of small capacity, such as a small rope of wire, or a chain, partially applied as rigging can ever completely meet this difficulty.

15. In the first attempt to carry this system fully into practice, many and very serious obstacles presented themselves, as may be readily conceived. It was for example required so to arrange and fix the conductors in series, as to preserve a perfectly jointed line, and at

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the same time a line not liable to become deranged by any strain or flexure which the spars could support: the series was at the same time required to be so perfect as entirely to preclude that violent expansive action commonly attendant on heavy discharges of lightning, and which not unfrequently distorts and twists very large iron rods; indeed the difficulty of satisfying these conditions, appeared to many practical sailors well acquainted with the severe strain to which a ship's mast is subject under the pressure of sails, so great, as to lead them to consider the plan as next to practically impossible.

16. The conditions of flexibility and continuity of the conductors were provided for, in the way figured in the *Nautical Magazine*, for the years 1834, and 1837,* that is to say, by constructing the series of narrow plates of copper sheet in lengths of four feet, placed in two layers, one immediately over the other, and in such a way as to allow the butts or joints of the one series to fall immediately over or under the continuous portions of the other, the series of joints being rivetted at the butts throughout the line. We have thus an alternating series of shut joints producing a perfectly continuous and flexible line of conduction. The conducting series thus arranged had now to be incorporated with the spars and led throughout the hull, and connected in various directions with the copper expanded over the bottom of the ship and with the sea; as indicated in the plans already given in the volumes of the *Nautical Magazine* just referred to. The incorporation with the spars presented some difficulty, which was finally overcome by laying the plates in shallow grooves cut for their reception along the aft sides of the respective masts from the truck to the keelson; and preserving an adequate connection in the caps through which the upper portions of the masts were required to slide. The plates were at first fixed to the spars by screws. The heads of these however soon twisted off and the plates as predicted became displaced. A short strong copper nail was now substituted by which the plates were pretty well secured, and were in this way applied to H.M. Ships *Druid*, 36, *Dryad*, 36, *Blanche*, 36, *Forte*, 44, *Spartrate*, 74, *Asia*, 84, *Caledonia*, 120, *Revenge*, 74, *Sapphire*, 28, and *Actæon*, 28, to these were added the *Beagle*, 10. All these ships were eventually employed on foreign stations; the last named vessel the *Beagle* was sent under the command of Captain Fitzroy, to the South Seas on a dangerous and difficult survey, and was on more than one occasion effectually preserved by the conductors.

17. From the circumstance of this method of lightning conductors for ships under the form of metallic plates being altogether a new and unpractised experiment, considerable expense and delay was almost certain to embarrass its progress. Thus the grooves in the spars, for the reception of the plates, instead of being speedily and accurately cut out by proper planes as now done, were at first formed by means of chisels and the hand, a slow and tedious process. The plates also instead of being cut parallel and with rapidity from copper sheet by a circular saw, and drilled for the fixings by machinery, were also cut by hand in the smith's

* See plates, in these volumes.

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shops, or by shears. Even the nails for fixing were produced from copper bolt instead of being furnished at a cheap rate by contract. All this would necessarily involve some very considerable outlay, and would furnish severe objections to the use of such conductors on the ground of finance; objections which the opponents of the measure did not fail to employ with the utmost rigour. The consequence was, that although it was well known that the system had upon the whole done good service in defending the ships just named from lightning, yet no public reports ever appeared. The whole invention was quietly discountenanced. The conductors as the ships returned from their period of service, were taken out of the masts, and thrown aside as old copper, and the whole system completely abandoned: and that too without any kind of investigation of its merits as determinable by experience in the ten vessels in which the conductors had been placed or any sort of inquiry whatever. The board of Admiralty of 1837 on being applied to, professed to have called for reports from the captains of the respective ships,* but no result ensued; no sort of information upon the question was ever elicited; in fact no records of any effects of lightning were forthcoming, and it was inferred that no opportunity of testing the plan had been met with. One point at issue however was clearly established;—the ships had in no way suffered from lightning, whilst of the remainder of the navy in commission during nearly the same period, above thirty sail, were known to have been struck by lightning in various parts of the world, and severely damaged. These included several ships of the line, steamers and large frigates. Thus, in November, 1832, the *Southampton*, a large frigate of 50 guns, was struck by lightning in the Downs, and narrowly escaped blowing up; in the *Dispatch*, 18, struck by lightning at sea off Cape Roca in 1832, no less than twenty men were more or less injured; in another brig, the *Racehorse*, struck by lightning in 1831, off Port Royal, the main-mast was ruined, top-mast shivered in pieces, all the bulkheads below deck smashed in pieces, and this sort of destruction prevailed generally throughout the navy.

18. At last in December, 1838, the *Rodney* of 90 guns, one of our finest ships in the Mediterranean, commanded by Captain Hyde Parker was assailed by a severe electrical storm off Syracuse. The main-royal-mast vanished in chips, and the fragments covered the surrounding water. The main-top-mast was rent, and the main-mast completely ruined. Two men were killed aloft and two more severely wounded. The gear on the main-yard ignited and the ship was on fire aloft, she remained for some time in great peril, and was only saved probably from destruction, by the coolness and intrepidity of Captain Parker and his officers, and the high state of dicipline, for which, as is well known, the *Rodney* was remarkable. The ship was placed for the time *hors de combat* and was obliged to be laid up under an expensive refit at Malta at a cost to the country of certainly not less than £3,000 or £4,000 to say nothing of the services of the ship. The main-mast on examination was found charred to the heart. The case was of sufficient

* Official Letter, dated June 15th, 1837.

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importance to attract the attention of the French authorities in the Mediterranean, and a report on the circumstances was in 1839, presented by Mr. Arago to the Academy of Sciences at Paris. Those who had so strenously objected to the new conductors on the ground of the expense of the plan, were now obliged to confess, that immunity from so much destruction and inconvenience to the navy, was worth purchasing at any price.

It is not unworthy of remark, that this very ship the *Rodney*, was fitted out and sent to sea from Her Majesty's Dockyard at Plymouth, almost at the moment that the new conductors which had done good service in similar ships, were being removed from their spars and cast aside as old copper: so that the *Rodney* was allowed to proceed to a station on which the dangerous effects of lightning were repeatedly experienced without any adequate means of defence whatever. Nothing the author of this paper could say, seemed to have the least effect, in preventing it. It is not unimportant in tracing the history of this question, to note this circumstance as being an instructive illustration of the difficulty with which advances in practical science not running immediately parallel with popular opinions have to contend; and with what little scruple the best ordered designs bearing on the public interest may be cast aside.*

19. The importance of effectually guarding the Royal Navy against such destructive damage as that just described, being every day more and more apparent, Lord Eliot, now the Earl of St. Germans, thought it expedient to call further attention to the question, through the medium of the House of Commons. In the course of the debate which ensued on the 23rd of April, 1839, the late Sir Robert Peel suggested the appointment of a naval and scientific commission, to enquire and report to the house on the subject, the members to be selected by the Board of Admiralty, a proposal to which Lord Eliot at once assented. In the able and very lucid speech with which his lordship introduced the subject, the great practical results of the conductors in preserving the ships in which they had been placed, from lightning, was clearly made out. The Secretary of the Admiralty did not attempt to deny the value of the plan, but was led under a misapprehension to state as an excuse for its discontinuance, the then obsolete orders of the Navy Board nearly twenty years before, to rescind their directions for a trial of the plan in H.M.S. *Java* and *Minden*, (13) but which the subsequent determination of the Admiralty in 1829, to carry it out in the ten ships just specified, (16) had completely superseded. The Board of Admiralty, of which the present Sir C. Wood was then the secretary, did however exercise as it must be allowed, a very sound discretion in their selection of the commissioners who were to investigate and report on this most interesting question. Indeed it would be difficult to find in any country,

* It is a remarkable fact, highly illustrative of the difficulty of introducing new inventions into use, that the prejudice in favour of the old backstaff, by which the sun's altitude was obtained at sea, occasioned considerable delay in the adoption of *Hadley's Quadrant* among seamen, now his most favourite instrument.—Ed.

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men more eminently qualified for the task, whether considered as practical sailors or as men of science. The commission consisted of Rear Admiral Griffith, Admiral Sir James Gordon, Captain Sir James Clarke Ross, Mr. Fincham, master shipwright of the Chatham dockyard, and Professor Daniell, of King's College. Mr. Waller Clifton, the private secretary of the secretary of the Admiralty, acted as the secretary of this commission, so that the investigation was altogether in the hands of the Admiralty, or at least of very distinguished and well qualified persons, especially recognized by the first Lord of the Admiralty as fit and proper persons to conduct it.

20. The commission commenced its sittings at Somerset House, on the 3rd of June, 1839, and terminated their enquiry on the 9th of July following. In the course of this time, the commissioners called in evidence the several officers who had been in command of the ships in which the new system of conductors had been applied, and collected a large amount of interesting and valuable information from other naval officers who had witnessed the effects of lightning at sea. They also invited the opinions of scientific men best acquainted with electrical science, Faraday, Wheatstone, &c.,—they examined the papers left on this subject by the late Dr. Wollaston, and Sir Humphrey Davy, and enquired fully into the practical and scientific merits of other temporary forms of lightning conductors for ships, such as chains, linked rods, and ropes of wire. Upon the whole evidence, however, before them, they arrived at the conclusion, that a capacious system of permanently fixed conductors such as we have adverted to (10) is the only effectual security for the royal navy from lightning.*

21. It further appeared in evidence in the course of this enquiry that the plan had been perfectly successful, and that although no official reports had hitherto appeared to this effect, yet the fact itself was fully elicited from the officers who were in the several ships. Commander Norcott states that at Rio, "awful lightning was conducted down the fore and main-masts of the *Druid*, but that no part of the mast was injured."† Commander Turner stated that, in H.M. ship *Dryad*, on the coast of Africa, "the ship appeared to be enveloped in flames, that the fore and mizen-masts were struck, but sustained no injury." Captain Fitzroy reports, that the *Beagle*, whilst under his command was "twice struck by lightning, but experienced no damage." Several men saw the lightning fall on the masts, &c.,—other evidence was elicited to the same effect; all this is valuable in a general history of any scientific invention, as tending to show the great importance of an untiring and steady perseverance in the cause of truth. But for this a large body of facts very important to science, would in this instance have been entirely lost sight of, and an effectual means of preserving the navy from lightning suppressed.

22. These facts also, very completely refute an opinion gratuitously offered to the Board of Admiralty, by Mr. Martyn Roberts, with a view

* Report—Shipwrecks by Lightning, 11th February, 1840, page 15.

† Report p. 94, 29, 28.

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to obtain a discontinuance of the new conductors in Her Majesty's ships. This gentleman in a letter to their Lordships, dated 6th May, 1839, says "If a ship provided with Harris's Conductors should unfortunately be struck by lightning, the electric fluid will descend into the hull, there create a lateral explosion, and perhaps in one moment hurry into eternity every soul on board the ill-fated vessel:" an awful prediction certainly; very cunningly devised, and very well calculated to alarm at the instant, the great responsibility of the Board of Admiralty, by a direct appeal to fears and prejudices rather than to sober judgment, and with a view to obtain the dismissal of the new conductors from the public service, and make way for a well known form of conductor of copper wire, proposed by Mr. Roberts in the same letter.* The evidence above quoted was most important in removing scare-crow arguments of this kind from the public mind, mere rags of science quite unworthy of all philosophical inquiry. Such statements at the present moment are set completely at rest by the well known fact, that since the new system of conductors has become general in the public service, damage by lightning has positively vanished from the records of the navy. In no instance has any damage arisen to Her Majesty's ships fitted with these conductors; they have been struck by heavy discharges of lightning with impunity in all parts of the world. In short the only damage by lightning which has been recently experienced has arisen in a few solitary vessels in which the conductors *had not been placed.* The various questions (2) to which we have already adverted, viz: attraction of conductors for the matter of lightning; lateral explosion; danger of sending conductors through the ship, &c., were also fully investigated by the commission upon the principles of a sound inductive philosophy, and completely set at rest. The author's views (6) were considered as satisfactorily established by very numerous and striking facts: with respect to the assumed "lateral explosion," the commissioners do not hesitate to state their "entire conviction of the futility of the objection."†

23. An objection of a mechanical kind was very strongly insisted on at this time, and which doubtless influenced the Board of Admiralty in their determination to discontinue the conductors in the navy. It was said that the grooves cut in the masts for the reception of the series of plates would necessarily weaken and damage the spars. No amount of reasoning or evidence appeared sufficient to counterbalance this assumption. Nevertheless, the reasoning and evidence was perfectly conclusive on the point, and experiment clearly showed that the spars were actually strengthened by the application of the copper-plates. It may not be uninteresting to notice here a series of experiments carried out at the Portsmouth Dock-yard relative to this point in 1831, and detailed in the Report of the Commissioners, page 81.

A light flexible spar of about thirty-four feet in length, the flying jib-boom of a twenty-eight gun sloop then fitting with the conductors, was supported at each end on two fixed points, and weights applied at its centre so as to subject the spar to flexure. The amount of flexure

* Report, page 45. † Report, p. 8.

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was measured to the 100th of an inch, by a fine silk line attached to the centre of the spar, and passing over a pulley an inch in circumference; the axis of the pulley carried an index in front of a circular scale divided into 100 parts, much in the way of a common wheel barometer. Things being thus arranged, the amount of flexure with certain weights was noted upon eight positions or squares of the spar previously to the copper-plates being applied; and again, subsequently to being applied: the result was, that the spar sustained a greater weight with the same amount of flexure in every position. In certain positions its resistance to flexure was increased by nearly one sixth. An account of these experiments, which are well worth attention, from many circumstances not requisite to notice here, will be also found with illustrative cuts in the volume of the *Nautical Magazine* for 1834.

Reports from officers in the command of the ships fitted with the conductors, very fully confirmed the results of these experiments: Commander Turner, of H.M.S. *Dryad*, on the coast of Africa, stated in reference to the conductors—"carrying sail has no effect on them, we carry a heavy press of sail sometimes." Captain Fitzroy, of the *Beagle*, says in his report—"were I allowed to choose between masts so fitted and the contrary, I should decide in favour of those with Harris' conductors, even in such small spars as the *Beagle's* royal masts; the plates of copper held their places firmly, and increased rather than diminished their strength."*

Similar statements were made by several other officers, viz.—Captain F. Grey, Captain Wellesley, Commodore Pell, and others. No amount of philosophical evidence, however, had any weight. The objection was strongly insisted on, although it had no other support than that of an inferior shipwright officer of the Plymouth Dock-yard, who, finding some rents in the condemned top-gallant-masts of the *Caledonia*, 120, from which the copper-plates had been removed, and which had been left exposed to a hot sun on the mast-slip, gave it as his opinion (in a letter to the surveyor of the navy), that these rents had been caused by the application of the conductors. This most unsatisfactory and suspicious statement, was speedily converted into a conclusion that the spars of this ship had "been injured by them (the conductors), and condemned in consequence." The whole of this, however, was subsequently disproved;† still, the exception was insisted on by those opposed to the system, and who being in power could always discountenance the practical progress of any invention in the Royal Dock-yards. Every one who has to struggle with official influence and prejudice, must expect to encounter difficulties of this kind, and must not be discouraged by them, but trust to the truth coming eventually to the surface, which it is sure to do at last, provided the case be based on sound principles supported by facts. The crooked policy of subordinate officers in the public service, and which sometimes leads them to compromise

* See report to the House of Commons—"Harris's Lightning Conductors," printed February, 1840, pages 10, 48 and 39.

† See report already alluded to, pages 9, 10, and 19.

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facts, with a view to a party purpose,—very seldom leads to any satisfactory result.

24. It appeared by the evidence given in the report, page 26, that the surveyor and assistant surveyor of the navy, were both decidedly adverse to the employment of the new conductors in H.M. ships. Sir W. Symonds grounded his objections on the want of proof of their efficacy; on the danger of bringing lightning into the ship; on the cost; and on the damage which would be done to all the masts of the navy; and last, not least, to the inconvenience which would arise from the removal of the conductors in case of "a panic arising from a failure of the plan;" certainly, strong and powerful objections, more especially as coming from such an influential quarter. Nothing but the most powerful evidence from facts, and the judgment of a perfectly independent and fully qualified tribunal, could have enabled the inventor to maintain his ground. Sir W. Symonds further objected to the fixing of conductors in ships, and preferred a temporary chain; but recommended more especially a plan of the assistant surveyor, which consisted of part of the plan of copper-plates then before the commission, conjoined with the method of wire ropes, which he contended would be preferable to all other plans and save expense. The Commissioners carefully investigated this method, as also certain other forms of temporary conductors as recommended by Mr. Roberts, after the plan employed in the French navy. But, they came to the conclusion, that all the methods of conductors of this kind, can only be regarded as a temporary and inadequate expedient—that such conductors "are liable to all the casualties to which a ship's rigging is exposed, and liable to lead to serious accidents."*

25. Having examined the question of expense, and shown how the cost of the system might be reduced, the Commissioners conclude their report in the following unqualified and strong terms:—"considering the number of lives lost by lightning, the immense amount of property which has been destroyed, and which is still exposed without adequate protection,—the inconvenience which has arisen, and is still liable to arise from the loss of services of ships at moments of great critical importance; the difficulty of procuring new spars on Foreign stations in time of war, not to mention the great expense of wages and victuals of the crews of ships rendered useless until repaired, we again beg to state our unanimous opinion of the great advantages possessed by Mr. Harris's conductors above every other plan, affording permanent security at all times and under all circumstances against the injurious effect of lightning; effecting this protection without any nautical inconvenience, or any scientific objection whatever, and we therefore most earnestly recommend their general adoption into the Royal Navy."

26. This investigation and report to the House of Commons complete and strong as it was, and emanating as it did from the highest Naval and Scientific authorities, actually selected by the Board of Admiralty itself, did nevertheless, fail to ensure the employment of the conductors in the Royal Navy.—The Earl of Minto, then the First Lord of the

* Report pages 6 and 11.

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Admiralty did not feel himself at liberty, to follow out the "earnest," recommendation of the commission, but determined on further trials of temporary conductors of wire ropes, which the Commissioners had rejected as "dangerous and inexpedient." Up to February, 1841, the conductors had been replaced in five ships only,* one of them under the Dock-yard government of Sir Charles Adam, the first Naval Lord, with a view of contrasting the cost of the new conductors with the expense of conductors of wire ropes: the *Actæon*, also had been refitted in 1838, in order to meet the debate in Parliament on Lord Eliot's motion and furnish some ground for saying that the plan had not been laid aside. In all these instances, the inventor was denied any interference in the work, which was placed at the mercy of those inveterately opposed to the further employment of his plan in the navy—the cost of fitting was run up to an enormous amount. In the meantime, orders were issued for the trial of certain forms of conductors of wire rope, and at last an order was issued, dated 27th August, 1841, the immediate effect of which was to throw overboard, the report of the naval and scientific commission altogether. It provided that "all ships ordered to be brought forward are to be fitted with wire rope lightning conductors, unless others be applied for, when the request is to be referred to their Lordships." Of course no officer appointed to a ship would care to make such an application in opposition to the views and policy of the Surveyor's department of the navy, countenanced by the first Lord of the Admiralty. Moreover, when the question of compensation arose for the many years of anxious labour and expense to which the author had been subject in bringing forward his plan, and the great benefits likely to arise from it to the navy and the country as stated by the Commissioners, he was informed officially, that the Board of Admiralty, although, admitting that he had the merit of calling public attention to the subject, yet did not see sufficient reason for granting the compensation sought. In a subsequent communication, dated 22nd February, 1841, the plan was allowed to be "an ingenious and successful application of well known principles, but not entitled to any award, as for an original invention, adopted into the public service;" as if every mechanical contrivance was not an application of well known principles. Take for example, the diagonal trussing for ships; is it not seen on every farmer's gate in the country? yet for this as applied to ships, a large sum of money *was awarded*. Thus was the system of permanently fixed lightning conductors for Her Majesty's Navy, now every where admitted as of the highest importance to the country, doomed for the time to succumb to authority in favour of inferior and objectionable means of defending the navy from lightning, and the inventor denied all right to public consideration. And this was done in opposition to the views of the greatest scientific authorities in Europe, and directly in the teeth of a naval and scientific commission, expressly selected by the Board of Admiralty itself, to investigate and report on the merits of the question.

(To be continued.)

* Return to the House of Commons, 17th March, 1841.

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Distance by Sound.

Sir.—As the determination of distances by sound is a very useful (and under proper precautions) correct mode of obtaining a base for surveying or military purposes, when actual measurement cannot be obtained, the following description of the method used during the late survey of the north-west Coast of America may be useful to your nautical readers.

It is an ascertained fact that sound travels at the rate of 1090 feet in a second of time, when the air is at the freezing point, or 32° of Farenheit, and that this rate is accelerated by 1·19 feet for every degree above that point. If therefore the correct interval between the flash and report of a gun can be measured, the distance is easily deduced.

The object then is to measure this interval to the nearest fraction of a second, to arrive at which the following plan was found to answer remarkably well.

First ascertain by repeated experiments the number of beats or ticks of your watch, to a second of time. Pocket chronometers generally beat five times to two seconds.

Fit your hat or cap with a watch pocket to hang over your ear, so as to leave your hands free to hold the glass.

Now for the modus operandi. *Herald* and *Pandora* being moored about five miles apart, and the exact distance being required, *Herald* hoists "Preparative." The long brass nine-pounder on the forecastle is run out on the side nearest *Pandora*, and pointed towards her, loaded with full service charge and slightly elevated. *Pandora's* officers are by this time assembled with their glasses in their hands, and their watches at their ears, perfect silence enjoined, and the answering pendant at the mast-head. This is acknowledged by *Herald's* dipping "Preparative," and as soon as *Pandora's* answering pendant is dipped in return, slowly hoisting a large red ensign (or any other flag easily seen) at the main; the moment it is up her gunner fires. The observers in *Pandora* having their glasses fixed on *Herald*, and mentally counting, one, two, one, two, one, two, with the beats of their watches, are ready to commence counting from the instant the flash is seen, till the sound reaches them. It will be found that when counting, it is more convenient to mark each ten beats by putting a finger down either on the glass or gunwale, as it is not easy even to *think* long numbers in rapid succession, and the number of tens is easily marked by the fingers down.

Suppose this operation has been repeated three times in succession, by each vessel; we have now the interval in time which must be reduced to space.

I should observe that the thermometer must be correctly noted each time.

Example.

Wed. 19th Jan., '48

For base by sound between *Herald's* 4th, and *Pandora's* 3rd position. Interval measured by Lieut. Wood's watch, which beats 240 to a minute. Thermometer 81°, wind light and across the line of sound.

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1st gun	113 beats	Ther. 81	Sound travels at	32	1090 ft.
2nd "	113 "	— 32	1·19 Accel. × by	49	58·3
3rd "	114 "				
		49	Sound travels at	81	1148·3
	113·3				

Now 240 beats : 60 sec. :: 113.3 beats : 28·325 sec.
And 1148·3 × 28·325 = 32·527·6 feet or 5·35 miles.

Or by Logarithims, thus :—

b

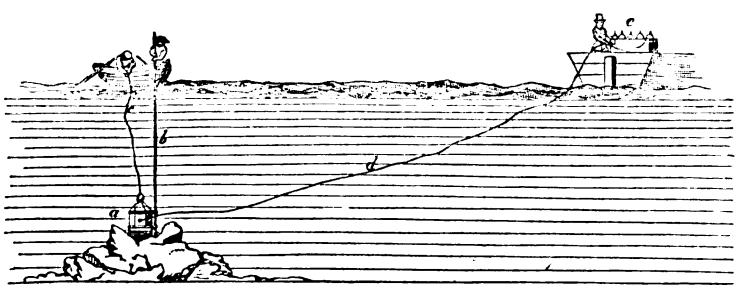
Arth. Com. of 240	7·619789	= 9·397940 Const.
Log..... 60s	1·778151	
Log..... 113·3	2·054230	
Log..... 1148·3	3·060055	
Log of No of feet in interval	4·512225	= 32·526 feet.

For short distances also of from one to one and a half miles, this plan is equally available. A musket may then be used. The same formula gives the result either for long or short distances.

As a proof of the accuracy of this plan, I may mention that during our survey of the coast to the southward of Panama Bay, most of the scales when tested by the observations agreed within a few hundredths of an inch with those given by sound, that is, that in a sheet projected on two inches to a mile where the base was determined by sound, the distance from end to end measured between the points of observation gave a scale of 1·996 inches to a mile, a very near approximation as it includes all sources of error from the shrinking of the paper, &c. It is worthy of note however that *all* the measurements between observations gave a scale rather smaller than the projection.

JAS. WOOD, *Commander R.N.*

SUB-MARINE OPERATIONS ON THE ROCKS AT HURL GATE.



a. Canister containing gunpowder, strongly lashed. *b.* Iron rod serving to guide the charge on the rock, by means of rings fixed on the canister. *c.* Rope to lower down the charge. *d.* Wire, or conductor, serving to ignite the charge. *e.* Powerful galvanic battery, to fire the charge.

In October, 1849, Mons. B. Maillefert, a submarine engineer, came to New York, from New Province, for the purpose of making proposals to

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remove the rocks from the Channel of Hurl Gate, having seen in the newspapers a notice, that the removal of these obstructions was contemplated. He called upon me with a letter of introduction from Maxwell Woodhull, Esq., Lieutenant U.S.N., and assistant in the coast survey, and explained his newly discovered method of blasting rocks under water. I was fully convinced that his plan for removing the rock from Hurl Gate Channel was preferrable to any other that had been suggested, and I introduced him to yourself, to the Hon. James G. King, and subsequently introduced him to the members of the Chambers of Commerce, when in session, all of whom were in favour of an experiment being made with this new mode of blasting.

Early in December of that year, memorials were forwarded to Washington, asking for an appropriation to defray the expense of removing these dangerous rocks from the Channel of Hurl Gate.

The memorials were presented in the House of Representatives, and referred to the Committee on Commerce. I gave M. Maillefert letters of introduction to the members of that Committee, and also to Colonel Abert, Chief of the Top. Bureau, and requested him to explain to the Committee, and Colonel Abert his new plan of blasting.—I had previously introduced him to Professor Bache, superintendent of the U. S. coast survey.

The Committee reported in favour of an appropriation of thirty thousand dollars, and this sum was included, as a specific appropriation, in the River and Harbour Bill, which was passed by the House, but failed in the Senate on the last day of the session, for want of time to act upon it.

In December, 1849, the Hon. James G. King, then a member of Congress, addressed us a letter, offering to be one of twenty, to defray the expense of removing Diamond Reef, in the harbour of New York, by way of experiment of the new mode of the French Engineer.

The following is a copy of his letter:—

House of Representatives, 13th December, 1849.

DEAR SIR.—I thank you for three communications, the last two dated the 11th inst, relating, one to Hurl Gate Rocks, the other to a Mint in New York. I shall support with earnestness a bill for an appropriation to remove the former, and for the establishment of the latter. Both too long delayed.

I was in hopes that my suggestions to you, might have been successfully acted upon—of raising, by subscription a sum sufficient to obliterate that opprobrious rock, between Governor Island and the wharves at the lower end of the city, which has so long endangered the channel of the East River, and I hope, yet, in such a manner, enough money shall be raised, to enable Mons. Maillefert to exhibit his plan of displacing such obstructions, that we may, with entire confidence, recommend him as a fit person to render the greater service of clearing Hurl Gate of its difficulties.

I am now as heretofore, although in no wise interested in shipping or or insurance stock, willing to be one of twenty, who will furnish the means of accomplishing the object designated, by way of experiment of the new mode of the French Engineer. I am, &c.,

JAMES G. KING.

E. Meriam, Esq., New York.

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Mr. Henry Grinnel, of the city of New York, the distinguished friend of Sir John Franklin, seeing that delays attended the making of an appropriation by Congress, voluntarily and promptly came forward and offered us an advance of the sum of five hundred dollars, towards the expense of removing Pot Rock, and subsequently increased the amount to five thousand dollars. Other individuals have honoured themselves by the aid they have given to this enterprise. Of them and their very efficient aid, we shall endeavour to speak hereafter.

Mr. James G. King, in a letter dated House of Representatives, July 9th, 1850, said, I will subscribe one hundred dollars towards the expense of removing Pot Rock, and double it if necessary, to carry out the project.

At a meeting held at the Merchants' bank, at which Mr. James G. King presided as chairman. and Mr. John Falconer officiated as secretary, in June, 1851, Mons. Maillefert made proposals agreeing to remove three of the most dangerons rocks in the Channel of Hurl Gate, for the sum of fifteen thousand five hundred dollars, which proposals were reduced to writing and placed in your hands as Chairman of a Committee, appointed by that meeting.

M. Maillefert, with his men, were occupied about two weeks, in the early part of August, 1851, at the Gate, in making preparations for firing submarine charges on Pot Rock. The first charge fired, on the 19th of the month, was not effective, the canister having been broken in lowering it from the boat; but two charges which were fired on the day following, broke off the rock to the extent of four feet in length.

The evening of the day on which the two charges were fired, I addressed to Professor Bache, superintendent of the United States Coast Survey, (then at Albany attending the American Scientific Association,) a letter, advising him that operations had been commenced at the Gate: the following is a copy:

New York, Evening of August 20th, 1851.

DEAR SIR.—I have the pleasure to announce to you that Monsieur Maillefert this day removed four feet from off the top of Pot Rock in Hurl Gate. Between three and four P.M., he fired two charges upon the rock, each charge was eighty pounds of powder, enclosed in a tin canister. The powder was ignited by means of a galvanic battery, which was on the Hurl Gate Metal Float, moored sixty feet south of the rock.

This work has been effected without any drilling of the rocks, the water acting as a fulcrum. When the explosion took place, the iron cylinders of the float sounded as if struck with a cannon ball, and one of Mr. Francis's Metal Life-boats, (with air chambers,) which was stationed about three hundred feet from the rock, was similarly affected by the explosion. A column of water was thrown by the explosion, to the height of thirty-five feet. The great interest you have taken in the navigation of our waters and the aid and service you have rendered to the commercial interests of the United States, and the commere of the world, by your increased labours as chief of the coast survey Department, entitles you to the first notice of the success attending this enter-

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prise. Should you have leisure to visit Hurl Gate, while the work is in progress, arrangements will be made to afford you an opportunity of witnessing the effect of submarine explosions. I shall feel obliged by being advised of the day we may expect you in the city, in order that I may give notice to the President of the Chamber of Commerce, and the President of the Board of Underwriters.

The reply of Professor Bache, is as follows:

Albany, August 23, 1851.

DEAR SIR.—Your letter of August 20th, has been handed to me by Dr. Beck.

I learn with very great gratification that M. Maillefert has succeeded in removing so considerable a portion of the Pot Rock, at Hurl Gate, as that to which you refer, and by such simple means. The work thus fairly begun is undoubtedly one of great importance to the commerce of New York, and to the coasting trade of the United States generally, and it must afford you no small pleasure, that through your continued and most zealous efforts, liberal and enlightened citizens of New York, have been induced to commence this undertaking, the difficulty of which only yields to its importance.

I thank you for having thought of me, in the first tide of your success, and sincerely hope and trust, that this young flŏra,' may give way to a full set.

In reply to your question in relation to my movements: I propose to leave here on Monday afternoon, and to visit the Lighthouse at Stony Point to examine the gas apparatus there on Tuesday, returning to New York on Tuesday afternoon, when I shall be glad to meet you at the Irving House.

Should you desire me to visit the work at Hurl Gate on Wednesday morning, I will be most happy to do so, unless unexpected necessity should occur to my more immediate return to my station in Maine, in which case you will take the will for the deed.

May success attend your work, until these now dangerous obstructions in Hurl Gate, are rendered harmless.

Yours, &c.,

A. D. BACHE.

E. Meriam, Esq., New York.

Professor Bache, on visiting the Gate, on the 27th, offered the aid of one of the assistants in the U.S. coast survey; in furthering these important operations, which was most cheerfully accepted, and W. A. Bartlett, Esq., Lieutenant, U.S.N., was detailed by him for this service.

We visited the city of Washington, and informed Colonel J. J. Abert, Chief of the Topographical Bureau, of the commencement of operations for removing Pot Rock. We had, sometime previous to commencing the work, called upon Colonel Abert, to consult with him in reference to the auditing the claims of Government for the money which might be expended by individuals, in the removal of the rocks from the channel of Hurl Gate, when Congress shall have made an ap-

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propriation therefor. Subsequently we addressed to him a written invitation to visit the Gate, and witness the effect of this newly discovered method of blasting rocks under water, without drilling, and received from him the following reply:

Washington, 27th September, 1851.

DEAR SIR.—I have received your kind note. I fear it will not be in my power to come on. From now until the meeting of Congress, is a period busily occupied by the Bureau in preparing the customary annual reports and estimates.

Your obedient, &c.
J. J. ABERT, *Colonel Corps T.E.*

E. Meriam, Esq., N. Y.

The first submarine charge was fired on Pot Rock the 9th of August, 1851, as above stated, and from that date to the 16th October, eighty-five charges were fired; of these, twenty-seven were of seventy-eight pounds, and fifty-eight were of 125 pounds each; containing in all 9,356 pounds of powder.

In the month of October last, Chevalier Steen de Bille, Charge d'Affaires of Denmark, made application to Professor Bache for information relative to M. Maillefert's plan of submarine blasting, and as to the success attending his operation at the Gate, and was referred by him to Lieut. Bartlett, of the U. S. navy, and assistant in the U. S. coast survey, then and now on duty at the Gate. Lieutenant Bartlett, in his reply to the enquiry dated October 16th, 1851, (which Chevalier Steen de Bille kindly permits us to use) says: "When M. Maillefert commenced his attack on Pot Rock in Hurl Gate, there was but eight feet at low water on the rock, *now it can safely be asserted, that there is not less than sixteen feet at low water.* * * * * It would *not be possible* to reduce Pot Rock by any other method of which I have any knowledge, than that used by M. Maillefert."

By the above statement, it will be seen, that *eight* feet of Pot Rock was broken down by eighty-five submarine charges.

From the 17th of October to the 17th November, fifty-eight charges of 125 pounds each, were fired on this rock; consuming 7,250 pounds of powder.

A survey was made on Pot Rock on the 17th of November, by Lieut. Bartlett, the result of which he communicated in a letter, of which the following is a copy:—

Hurl Gate 3½ *p.m. Friday, Nov. 17th*, 1851.

SIR.—I have made a very complete examination of Pot Rock, at low tide, to-day. I have to say now, in anticipation of the plotted sheet, *that there is not less than eighteen feet and a quarter of water on any part of Pot Rock at low water to-day.* As soon as possible, I will give you the plane of reference to mean low water.

Yours, &c.
W. A. BARTLETT, *Lieutenant, U.S. Assistant in the Coast Survey.*

Mr. Meriam.

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On the 8th day of November, I addressed a communication to Col. J. J. Abert, Chief of the Bureau of Top. Engineers, informing him of the progress of the work at the Gate, which communication also contained a copy of the note addressed to me by Lieut. Bartlett, the day previous, stating there was not less than eighteen feet and a quarter of water on any part of Pot Rock at low water on the 7th.

The following is a copy of the reply:

Bureau Top. Engineers, 12th November, 1851.

SIR.—I have received your letter of the 8th, stating the success which has attended the operations for removing the "Pot Rock" from Hurl Gate passage.

The information is highly gratifying.

Yours, &c.

J. J. ABERT, *Col. Corps, T.E.*

E. Meriam, Esq., New York.

From the 8th of November to the 12th of December, ninety-one charges, of 125 pounds each, were fired on this rock; consuming 11,375 pounds of powder. The greater portion of these charges were fired in water of more than twenty feet in depth, *with a view to the removal of the rock to the depth of twenty-four feet.*

A thorough and very minute survey was made on Pot Rock during the month of January. The soundings were made every nine feet the length, and every three feet the width of the rock.

Area of the Pot Rock.

At the depth of twenty-four feet, the extreme length is 225 feet, and the extreme width sixty feet.

Soundings on Pot Rock.

360 soundings were made on Pot Rock, with the following results:—

8	Soundings	of 19	feet.
1	do	of 19¼	do.
20	do	of 19½	do.
8	do	of 19¾	do.
54	do	from 20 to 20⅓	feet.
42	do	from 21 to 21⅔	do.
72	do	from 22 to 22⅓	do.
54	do	from 23 to 23½	do.
107	do	from 24 to 30	do.

The soundings are related to a plane of mean low water.

Comparison of Depth before and since Blasting.

August 1st, 1851—Mean low water, 8 feet.
Do. 1st, do. —Mean high water, 14½ feet.
January, 1852—Mean low water, 19 feet.
Do. do. —Mean high water, 25¼ feet.
Increased depth eleven feet.

The highest point of Pot Rock, as will be seen by the soundings stated above, is now *nineteen feet* under the surface at mean low water,

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and the condition of this important thoroughfare, formerly, and only six months ago, one of the most dangerous in the world, has undergone such a change, *that the old name and designation, "Hurl Gate," ought not to be used any more.*

This splendid result has been obtained by a labour of three months and twenty-one days, between the 19th of August, (when the first charge was fired on this rock,) and the 12th of December, when the cold weather compelled M. Maillefert to suspend operations for a while. During this period, two hundred and thirty-four submarine charges have been fired upon Pot Rock, *(twenty-seven* of which were of seventy-eight pounds each, and *two hundred and seven* of one hundred and twenty-five pounds each), consuming in all 27,981 pounds of powder, as above stated.

We propose now to speak of the other Rocks as follows:—In addito the breaking down of Pot Rock, M. Maillefert has removed a dangerous rock, described on the chart as "Bald-headed Billy."

In a communication addressed to us by Professor Bache, Superintendant of the Coast Survey, under date of December 3rd, 1851, he says: "I send an extract of a letter from Lieutenant Bartlett, in regard to the removal of Bald-headed Billy." *The extract is in the words following*: "The work at Hurl Gate and its approaches, continues to produce valuable results. In my last report, I intimated that "Bald-headed Billy," *a dangerous rock* lying near Halsey's or Hallet's Dock, (vide report of Lieutenant Commander D. D. Porter, Assistant in the Coast Survey,) would soon be demolished and removed. I have now the honour to report, that it has been done most effectually, and transported to deepest water in mid-channel. By accurate measurement of this "Boulder," after a submarine explosion had dislodged it from its bed, it was found to be sixteen feet long, ten feet wide, and eight feet deep, and as it was too heavy to be floated whole, it was then split by drilling, and the two parts separately floated away to deep water, being lifted by the Iron Cylinder floats at high water."

Two other dangerous rocks, opposite Mr. Edwin Hoit's Mansion, have been destroyed by M. Maillefert. On one of these rocks, a vessel was wrecked shortly after he commenced operations at the Gate.

Eleven charges, of 125 pounds each, have been fired on *Frying Pan*, but no survey has since been made on that rock.

Four charges, of 125 pounds each, and three charges of seventy-eight pounds each, have been fired on *Way's Reef*. No survey has since been made on this reef.

Professor Bache, writing us in relation to the operations at the Gate, under date of December 8th, says: "*I have received a very interesting report from Lieutenant Bartlett.*"—This report has been appended to the annual report made to Congress by the Superintendent of the U.S. Coast Survey, and was presented to the Senate and referred to the Committee on Printing. Mr. Borland, from that Committee, reported in favour of printing five thousand copies of the report, and the Senate adopted the report of the Committee.

The Superintendant of the Coast Survey writes us, under date of

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January 13th, that it will be several weeks before this report will be printed. Therefore, we shall *not* be able to lay it before the public until the printed copies are *first* placed upon the desk of the Members of Congress.

Professor A. D. Bache, Superintendent of the U.S. Coast Survey, from the commencement of the agitation of the subject touching the removal of the rocks at the Gate, has afforded every facility and aid in his power, he takes a deep interest in this work.

The following is a list of the names of the persons, firms, and *Commercial Institutions*, who have made advances in money towards defraying the expenses of removing the rocks from the Channel of Hurl Gate, viz:

F. Cottenett.	A. Woodhull.
Benkhard and Hutton.	Boorman, Johnsten, and Co.
Robert B. Minturn.	L. S. Suarez.
John Bridge.	Mercantile Mutual Insurance Co.
Robert Kermit.	Atlantic Mutual Insurance Co.
Brown Brothers, and Co.	General Mutual Insurance Co.
James G. King.	Astor Mutual Insurance Co.
Adam Norrie.	Union Mutual Insurance Co.
William B. Astor.	F. A. Delano, jun.
Jacob Little.	A. H. Ward.
Goodhue, and Co.	George B. Deforest and Co.
Joshua Macy, and Sons.	S. J. Beebee.
Henry Ruggles.	Charles H. Marshall.
Moses Taylor.	L. J. Wyeth.
H. K. Corning.	Sun Mutual Insurance Co.

Messrs. F. Cottenett, James G. King, Robert Kermit, and John Bridge, have each made a second advance. Some of these subscribers will probably increase their subscriptions; we therefore defer stating the several amounts in detail.

We have received towards the expense of removing the rocks, altogether, 4,160 dollars, being subscriptions to a loan to be re-paid by the Government of the United States when Congress shall have made an appropriation therefor.

We have obtained as a temporary loan, the sum of 932 dollars and fifty-seven cents, to be paid when Pot Rock shall have been removed to the depth of twenty feet below mean low water.

We have paid to M. Maillefert, from time to time, 2,780 dollars and thirty-four cents, and we have paid for him 2,009 dollars and thirteen cents for powder; 275 dollars for tin canisters; twenty-eight dollars and four cents for copper wire, and paper—making in all 5,092 dollars fifty-one cents.

In addition to the amount due for money borrowed, there is owing for powder, 1,128 dollars and two cents; for tin canisters 290 dollars and forty-nine cents; for anchors, chains, cordage, &c., 240 dollars and thirty-one cents; and for India rubber diving dress and life preservers,

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190 dollars; making together with the amount of money borrowed, 2,881 dollars and forty cents.

The removal of such portions of the rock as are less than twenty feet below the surface, will require some further outlay of money, the amount of which cannot at present be ascertained.

The subscription made by Mr. Henry Grinnel, towards the expense of removing Pot Rock, is 5,000 dollars, of which 2,000 becomes due when the rock is removed to the depth of twenty feet, and 3,000 when removed to the depth of twenty-four feet.

That most estimable and worthy citizen, Joseph Walker, has been a friend to this enterprise. To those who best know him, I need hardly say a word beyond stating this simple fact. When the work was commenced he was confined to a sick bed—his illness continued several months. In a note addressed to me on the 13th of September, he says: "I have read in the *Journal of Commerce*, with great interest, the account of the successful operations of M. Maillefert, at Hurl Gate * * * * I had hoped to have aided thee in raising the balance of the requisite sum after the expenditure of Henry Grinnel's munificent subscription, but I fear my recovery will be too protracted. * * * * "This plan," (referring to advances to carry on the work), "I had mentioned, to my neighbour, Walter R. Jones, but nothing was decided on."

Mr. Joseph Francis, the inventor of Metallic Life Boats, has kindly furnished for gratuitous use at the Gate two of his invaluable Metallic Life Boats. These boats have been of great service at the Gate to the submarine operations on Pot Rock, and it would have been almost an impossibility to have got along with the work without them. On one occasion, a column of water, thrown up by the explosion of a charge, owing to a very sudden change of wind, was thrown upon the Life-boat from which M. Maillefert fired the charge, and entirely filled it with water, and had it been a common wooden boat would have sunk it instantly; notwithstanding the boat being filled with water, it continued to float, and M. Maillefert, received no other injury than that of being thoroughly drenched.

During a storm, at the commencement of operations, it became necessary to affix a light at night on the rocks, which could not have been accomplished at the then state of the tide with a common boat.

The Union Ferry Company, on three different occasions, furnished, free of charge, one of their best steam-boats, to enable our citizens to visit the Gate, and witness the novel operation of exploding large charges of gunpowder, on the surface of rocks, under water.

Had the removal of Pot Rock by the extraordinary process of drilling and blasting been undertaken, hundreds of thousands of dollars would have been expended without accomplishing the object.

The expenses on Pot Rock now amount to about 6,000 dollars, but this is a very small sum, considering the importance of the work.

To yourself, and Joseph Walker, are known the difficulties which produced delay in the commencement of this work; at one time, these difficulties gave the enterprise a complete check. They did not, however, ultimately prevent the breaking down of Pot Rock; but had the effect

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to increase the expense more than two thousand dollars, by delaying the operations to a late period in the season—had it not been for these difficulties, Pot Rock would have been removed to the depth of twenty-four feet, three months ago.

M. Maillefert will not make any money by these operations, for the work will cost as much as he is to receive for blasting these rocks: besides, this he has been waiting for to do this work, since October, 1849, and the necessity of immediate commencement of the present enterprise arose from this fact, and also from the delay of procuring Government appropriations.

M. Maillefert would have been obliged to abandon his proposal for removing these rocks, had not the work been commenced in 1851.

When operations were commenced on Pot Rock, its apex reached to within eight feet of the surface, at mean low water, with sixty feet soundings on one side and sixty-two on the other, and had therefore a height of fifty-three feet. Being situated near mid-channel, and extending crossways of that channel, which is both narrow and crooked, and in a very rapid current, constantly changing with the tide, it presents a most formidable and dangerous obstruction to the navigation of this great thoroughfare. A rock that rises so near the surface in deep water, is far more dangerous than a rock of the same size situate in shoal water, for the reason, that when a vessel strikes upon it she may suddenly sink with all on board, while in the shoal water the result would be otherwise.

The operations at the Gate are surrounded with difficulties; they were not commenced until late in the season, and the cold was so severe in December and January, as to compel M. Maillefert to suspend work. From the 1st of December to the 31st of January, (both days included,) there have been of freezing temperature, eleven hundred and fifty-five hours, some of which has been intensely cold; leaving but three hundred and thirty-three hours, during which the temperature was above the freezing point; and of this last, much of the time, high winds and storms prevailed. Besides this, in short days there is but one available tide, and the firing on Pot Rock can only be effected during a few minutes of slack water.

The same difficulties, or greater even, attend the *surveying operations*, which are necessary, not only for the ascertaining the results obtained, but also for the proper direction of the blasting operations. A survey on Pot Rock can only be made during the *slack water at low tide, and in very favourable weather;* a thorough survey of a rock of this extent requires, under such circumstances as these, several hands. It will easily be understood, that the surveying operations, which however, cannot be dispensed with, occasioned great loss of time and considerable expense, and are far from being as easy as many suppose them to be.

But these difficulties are far from abating the energy and good courage of M. Maillefert. *He has recommenced* operations on the very first favourable day, and confidently trusts that he will be able 'ere long, to complete this great and useful work, which has become an object of

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general interest, and in the execution of which, he has been so far, most eminently and most wonderfully successful.

When M. Maillefert began operations at the Gate, but few persons had confidence in his success; the plan of blasting under water, by placing the charge on the surface of the rock, without drilling, using the water as a fulcrum, or resisting medium, they considered unphilosophical; but complete success has attended this great experiment, which he has been enabled to make, and the efficiency of this new method of submarine blasting, has been demonstrated so as to convince the most sceptical.

The removal of the rocks from the Gate is a great undertaking, it is a work of necessity, a work of utility, and has been undertaken solely for the public good. No individual is to receive a dollar of pecuniary benefit, by the accomplishment of the work, but all the advantages derived from its completion, will inure to the public. It is a life-saving enterprize, for had these rocks been allowed to remain, 'ere long some ill-fated steamer, filled with passengers, would have been sunk in the deep channel of the Gate, by striking on one of these rocks, and perhaps half the passengers and crew, would in an unexpected moment, have met death in a watery grave.

Three hundred vessels have passed the Gate in a single day, and some of these were large steamers with hundreds of persons on board, all of which incurred more or less risk in passing this dangerous rock, which for two centuries has been a terror to navigators, and for more than a century a reproach to the commerce of New York, and a reproach to the country, for the reason that *no effort had before been made to remove it.*

Since the commencement of measures preliminary to the beginning of the work at the Gate, the lives of five persons have been sacrificed on Pot Rock; four, by the upsetting of a boat in passing over the rock, and one, that of a person struck in the breast by the tiller of a vessel, the rudder of which struck the rock in passing over it.

Pot Rock is now no longer a terror to navigators—no longer an obstruction to the navigation of the Gate by any vessel, that has used that thoroughfare for the last twenty years; and besides this, the triumphant success of this plan of blasting has been tested.

The discovery of this new mode of blasting rocks under water, without drilling, the value of which has been demonstrated by the removal of one of the most dangerous rocks from the very borders of a whirpool in one of the greatest thoroughfares in the world, is worth millions of dollars to the Government, independent of the advantages to be derived from the removal of these great obstructions to navigation.

Application will be made to Congress for an appropriation to repay the money advanced by individuals to defray the expense of removing the rocks from the channel of Hurl Gate, as soon as Pot Rock shall have been removed to the depth of twenty feet below mean low water, and we trust, in view of the circumstances under which the work has been undertaken and thus far accomplished, that the application will be successful.

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There is a kind and good feeling in the community towards this enterprise, and an advance of money in anticipation of the action of Congress in the premises, can without doubt be obtained in sufficient amount from our good citizens and commercial institutions to complete the work.

This enterprise has paramount claims on our public spirited citizens for support, and we trust that such further advances of money, as may be wanted, will be fast made, as fast as needed for the work, in anticipation of an action of Congress.

I am, &c.,
E. MERIAM.

Supplementary Report.

Since the completion of the foregoing report, I have received despatches from Washington, of which the following are copies:—

Coast Survey Office, February 10th, 1852.

SIR.—I send herewith a copy of Lieut. Bartlett's report on the soundings made on Pot Rock.

I am, &c.,
A. D. BACHE.

E. Meriam, Esq.

New York, January 26th, 1852.

SIR.—I have the honor to enclose a sheet by which you will be able to perceive with much minuteness the results of my latest surveys of Pot Rock in Hurl Gate Channel.

You will perceive that the least depth at *mean low water is now nineteen feet.*

These determinations were made with great care on the 1st, 2nd, and 3rd instant, and can be most fully relied upon, I have withheld my report in order to ascertain whether the season would permit further operations in blasting by Mons. Maillefert.

But such is now the condition of the ice in the East River, that there is no reasonable prospect of resuming work before March, and I think the results are so favorable and of such vast importance to the general commerce of the coast, that the facts should be widely known before spring.

If means could be obtained for deepening the water on Hallett's Point, the Frying Pan and Way's Reef, Hurl Gate could be made the best Channel into New York.

In addition to my former reports, I beg leave to call your attention to the notes and remarks on the enclosed sheet, as setting forth all that can be said as to Pot Rock work.

I am, &c.
WASHINGTON A. BARTLETT, *Lieut. U.S.N.*
Assistant in U.S. Coast Survey.

To Professor A. Bache, Superintendent U.S. Coast Survey.

We stated to you in the general report, that M. Maillefert re-commenced firing on Pot Rock, on Monday, February 2nd, he has continued

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to fire every week day since that the weather would permit. "The notes and remarks," which Lieut. Bartlett refers to in his letter to professor Bache, contained in the sheet which he enclosed, are copied *verbatim* into the general report.

I am, &c.,
E. MERIAM.

Walter R. Jones, President of the Life Saving Benevolent Associations, New York.

[We understand that M. Maillefert's process was tried a short time ago at Jersey and failed. In a future number we hope to be enabled to say something about it.—ED.]

RECOLLECTIONS OF SIX MONTHS IN PUGET SOUND.

(Concluded from page 249.

THE arrival of H.M. steam-vessel *Cormorant* during these operations was hailed with much satisfaction. This circumstance, together with the unexpected presence of Captain Baillie and a party from the Columbia River, where the *Modeste* was stationed, tended greatly to enliven our proceedings; and as the health and comfort of the ship's company was a point which at all times occupied the earnest attention of the captain and first-lieutenant, some new amusements were thought of, and amongst the number, racing formed one of the most diverting. A course was marked out upon a level piece of ground behind the fort, posts were planted, and every arrangement made for carrying on this exercise in the most approved manner.

Horses were purchased from the Indians, for a few blankets each, and duly trained at the barracks. A fine animal of much celebrity for swiftness, was brought from the Columbia, and backed against the Nisqually pet, to add greater zest to the races. A faint description may suffice to give a general idea of the proceedings on these occasions.

There were several sweepstakes named, the officers, ship's company, and Indians: the horses regularly entered. Foot races between our people and the natives, and the day would not be complete if a greasy pole surmounted by a fat leg of mutton, did not adorn the field. Umpires were appointed to see "no jockeying" took place. The weighing, the colours of the various riders, the hallooing, and the excitement of all hands, was most amusing. The horses were started by one of our officers, a merry "lad" he was; very tall, white hat, shooting coat, top-boots, (home manufacture,) spurs and whip, and what with his hearty laugh, and one, two, three, "*hoff*," formed no small portion of the fun. The gentlemen riders, usually managed to stick on very well; an occasional fall being the only accident that ever happened to them.

The ship's company's sweepstakes was productive of great merriment, about sixty blue jackets and marines starting once round the course. All being mounted (chiefly bare-backed) scarcely was the anxiously

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anticipated "*hoff*" uttered, then "off" indeed came half a hundred of them, strewing the course in elegant confusion, the poor horses bolting in every direction. However on Jack's regaining his perpendicular he generally hied away through brambles and bushes in search of his refractory steed. These disasters gave much pleasure to the Indian owners of the horses, who have a great notion of their equestrian powers. Then came the foot race, in which the natives joined. For a short distance these people gained ground, but if the run was extended to any considerable length, we always won the prize. The leg of mutton had to be reclaimed, and which usually fell to the lot of a sturdy seaman, who must certainly have had much practice at a country fair.

The band playing during the intervals, made the time glide away most agreeably; and the day being spent in frolic and good feeling, the men returned to the ship tired out, and truly delighted with their recreation. It is somewhat remarkable, that during all these races, not one accident ever occurred to render the slightest surgical attendance necessary.

Our daily occupation was varied by the arrival of a brig with a cargo of coals from Callao, for the use of the *Cormorant*. Having been unladen at Fort Victoria, she was brought down to Nisqually, and filled with a cargo of timber and plank, and then sent back to Valparaiso.

Towards the latter end of August, it was reported that the natives on the north side of Vancouver's Island, had shewn specimens of coal to the master of a Hudson Bay trader. The *Cormorant* was at once despatched to ascertain the correctness of this intelligence. She proceeded through Haro Strait, and when in the vicinity of Mc'Neill's harbour, some parties explored the adjacent country. An abundance of coal was discovered, some pits were dug, and a coal formation found to exist. The steamer obtained sixty tons from the Indians, who brought it off in their canoes; blankets, tobacco, &c., being bartered for it, thus costing the government 4s. 6d. per ton. It appeared that they gathered it from the surface of the soil. Some of it was afterwards consumed by the *Cormorant*, and pronounced to be of a very fair quality.

The fact of coal abounding so near to Fort Victoria, must be a matter of the greatest import in any future endeavour to establish a trade between Vancouver Island, and China; and therefore especially gratifying to the supporters of Captain Synge's recent proposal to create a line of communication from Canada to the West Coast, by crossing North America. The enormous charge for freight from Chili to Vancouver Island would materially retard his plans, since it cost upwards of £2,000 to bring 3 or 400 tons from Callao. But when it is known that this necessary auxiliary in all operations by steam, is to be procured within so short a distance of the settlement, and at so reasonable a rate, it cannot fail to add an additional inducement to promoting his excellent and praiseworthy scheme.

About the latter end of June we had the pleasure of hearing that our old friends the *Herald* and *Pandora*, were in the Strait. Preparations were at once made for sending them fresh stock, as they had experienced many privations in their long and weary passage from Panama.

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The launch was put in requisition, and loaded with eleven sheep, besides three barrels of lime for surveying purposes. The utmost haste was made to meet them at port Townsend, but a gale of wind prevented her getting there until the morning, and after they had sailed for Victoria. They were seen from Point Wilson, and a couple of natives being promised an old shirt, if they would paddle after them with a letter, the errand was readily undertaken. On the following day the canoe returned, and during the night a surveying boat from the *Herald* came for the stock; her worthy captain not forgetting to send some prime "Irish" whiskey, which was discussed in a very appropriate manner.

On a very sultry evening in the latter part of September, Nisqually was visited by a thunder storm of unusual severity. The wind, during the day had been at south-east, and the sky overcast with dense clouds.

Towards 7h. P.M., the thunder roared in the most awful manner, and its grandeur was greatly increased by the reverberations amongst the neighbouring woods, which were set on fire in several places by the vivid flashes of lightning. The band had assembled on the poop, and the men were smoking their accustomed pipe on the half deck and galley. The midshipmen had just finished their tea, and the boatswain was quietly sitting at the door of his cabin. A sudden report (as if many of the guns had gone off,) threw all hands into the utmost consternation. The band terror stricken, made a simultaneous rush for the main hatchway, and the men from the galley equally frightened, darted off in a body for the upper deck. A scene of confusion ensued which it is difficult to describe. The lightning passing out on the starboard side through the branch of the conductor in the berth, had the effect of clearing it in an instant. The port branch passing through the boatswain's cabin, being well charged with electricity, threw its occupant into the middle of the steerage.

The panic having somewhat subsided, the well was sounded, but nothing to indicate the slightest damage to the ship was discovered by this operation. The smell of sulphur however, at once solved the the mystery. The ship had been struck by lightning. On subsequent investigation, it was found to have been a double stroke, one fork striking the main-royal spindle, and the other received by the main-mast itself, just above the spider hoop. Those who were standing near the mast on the upper deck describe the effect of the fluid as causing the mast to be illuminated with a most beautiful stream of purple light. The injury sustained on this alarming occasion, absolutely amounted to nothing. Where the lightning came in contact with the spindle, a slight fusion only had taken place. At the bottom of the main-mast, about four feet above the upper deck, the nails which secure the butts of the conductor were a little started. On either side of the ship where the conductor meets the copper, the latter was lifted, as if done with a chisel. Thus, under the hand of Divine Providence, one of the most fearful and disastrous casualties which can peril a sailor's life, was rendered harmless through the agency of a well constructed means of carrying off this destructive fluid; and attended with no other consequences than those of causing a momentary scene of confusion amongst the crew.

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It would be unjust to the talented and indefatigable inventor of these conductors, if the present opportunity were not taken to express the confidence which every person who witnessed this appalling scene, place in the efficacy of his plan. It being their unanimous conviction, that had the ship *not* been fitted by him, and in a manner so as safely to carry off the heavy discharge of electric fluid which struck her on this memorable evening, not only the main-mast, but the ship herself would have in all probability been destroyed, besides entailing a sacrifice of human life which it would be heart-rending to contemplate.

This single instance alone, should therefore be sufficient to convince the advocates of "other methods" of supplying our ships with lightning conductors, that until they can shew their efficiency by such an example as is here recorded, their schemes of combating the violence of an electric discharge, will remain unheeded; and they may rest perfectly assured that no seaman will trust their inefficient ropes or wires, or place the least reliance in any other plan, than the inimitable and eminently successful one, already provided by Sir William Snow Harris.

The period for our departure to the northward being come, after taking a kind farewell of the inhabitants of the Nisqually, the ship was unmoored and towed by the *Cormorant*, to Victoria. In entering the narrows, we passed over a sunken ledge, laid down in the chart, and got 6 fathoms. On clearing Vashon Island the weather became very thick, which prevented our getting a view of the inlet, or enjoying the magnificent scenery which it presents. We anchored in the bay off Esquimalt, on the anniversary of Camperdown, having been the greater part of a day on the passage. A very short stay was made here, and on the morning of the 12th, we were again in the wake of the steamer. When clear of the Strait, the hawsers parted, in consequence of the heavy swell setting in from the westward; three hearty cheers were given her, and sail was then made for California.

It may not be unimportant to observe, that the strait of De Fuca, as well as the coast from Cape Flattery to San Francisco is subject to dense fogs from about October to April; so much so, that on our being towed from Victoria we scarcely saw the steamer at all, which rendered our steerage very troublesome. It has already been remarked that on our arrival in the Strait, early in April, the land was frequently obscured, whilst the sun was quite clear overhead. The master, who had provided himself with the "pendulum horizon,"* before leaving England, was frequently enabled, whilst on this coast, to avail himself of its use in finding his position; this simple auxiliary to the sextant rendering an observation possible, when without its aid, he would have had to endure all that perplexity and anxiety, inseparable from the cautious navigation of a ship, when beset by fogs near the land.

In concluding this brief sketch, it may be as well to say a few words on the character and disposition of the tribes inhabiting these regions, adding also, a remark upon their capability of profiting by civilization.

* This instrument is described in our volume for 1844, and observations with it also.—Ed.

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As a general rule, they are cunning in the extreme; addicted to theft; exceedingly filthy in their habits; and often known to commit the most atrocious murders for the sake of plunder. One instance of the latter crime, in particular, came under our observations whilst in this place. A well known chief, called "King George," residing in the Strait, and, who prided himself on his riches, especially in having a gold laced cap, and a pair of old epaulettes, had been boasting of his treasures to another chief. This man determined to rob him; he was watched, waylaid, murdered in cold blood, and stripped of everything. Many other acts of the same ferocious description were narrated to us during our sojourn here.

We had, however, no reason to complain of the disposition of these Indians, having always found them most willing to oblige, cheerful, and quite able to appreciate a joke: not averse to labour, if honestly paid. They are excessively fond of gambling, and will sit for whole days in the enjoyment of this pastime. Instances are not wanting in which a man, after having staked his wife and children on the game, had actually pledged his own liberty for another chance, and on losing it, had resigned himself as the slave of the winner.

It has been argued that these natives are incapable of any degree of civilization, and that the flattening of their heads tends to dull and destroy their mental faculties. These notions do not appear to hold generally, for our experience amongst them gave anything but a bad impression as to their wit, or power of acquiring information,. They are very superstitious, believing in all sorts of evil spirits; the sole occupation of their "medicine men," or enchanters, being to keep these imaginary phantoms from the sick or dying. They have an ill-defined idea about a future state, imagining that after death their souls will return to some favorite hunting ground, but it did not appear that they possessed the slightest knowledge of a supreme being, or indeed of any spirit whose goodness prevailed thoughout the universe.

They are clever mimics, and apt at discovering any peculiarity of character, affixing some ridiculous sobriquet to the person shewing the least sign of oddity. A young boy (since dead) who was brought to England in our ship, soon learned the English language, and also picked up some Spanish phrases. He knew several native dialects, yet, was an excellent specimen of a "flathead;" his disposition was such as to endear him to every person on board, and before his death he had made much progress in reading and writing.

It will be a bright day for the natives of Vancouver Island when their country becomes the seat of commerce and civilization. It will be a happy hour when the glorious light of christianity sheds its gladdening rays amongst them; and, by the introduction of intellectual cultivation and European manners, they are changed from their present forlorn and benighted state, into new and happy life, which has hitherto been withheld from these debased and neglected Indians.

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Notes on a Voyage to China in Her Majesty's Late Screw Steamer Reynard.—*P. Cracroft, Commander.*

Funchal, Sierra Leone.

On Saturday, June 2nd, at 2 P.M. we steamed out of Portsmouth harbour and anchored at Spithead, banked the fires up, took in powder and shells and embarked Mr. Duncan the African traveller, two persons, Messrs. Mc. Cosky and Aberdeen, sent out by the Botanical Society, and a free black, with a quantity of presents for the King of Dahomeh, also supernumerary officers and no end of parcels for the Coast of Africa, Cape of Good Hope, South America, and East India Stations, and at 6 P.M. left Spithead for Plymouth. Having arrived in Hamoaze on Sunday forenoon, we completed coals and water on Monday, and on Tuesday morning at 10 A.M. embarked mails for Madeira, St. Nicholas, (Cape Verds), Sierra Leone, and Ascension.*

We steamed out of the sound at half-past two in the afternoon and half an hour afterwards lifted propeller and made all sail.

At eleven P.M. Lizard Lights were north, from which took the departure. On the 7th calm, commenced steaming at 3h. 20m. P.M., till 1 P.M. on the 8th; temperature of engine room 85°

14th.—6 A.M. observed Porto Santo thirty to thirty-five miles distant, and discovered an error in the starboard compass of three-quarters of a point, ship's head south-westerly; at 6 P.M. came to with B B in Funchal Roads, in 26 fathoms, veered to 48; Looe Rock W.b.N., Old Fort E.N.E., Convent near Signora de Monte, N.N.E. half a mile off shore.

Found in Funchal Roads the American corvettes *Portsmouth* and *York Town*, the former with the broad pendant of Commodore Benjamin Cooper, which I saluted with eleven guns, and the Portuguese flag with twenty-one guns. The *Seagull* packet arrived on the 15th, having sailed from Falmouth on the 6th.

On the 17th at 5 A.M. steamed out of Funchal Roads; at 6h. 30m. lifted propeller and made sail. On Tuesday the 19th, at 2h. 30m. A.M., in taking in the lower studding sail, ship going nine knots, Henry Mains, belonging to my galley, fell overboard; rounded to and picked him up, thanks to the life buoy burning well;—a miraculous escape.

On Saturday at 2 A.M. hove to off St. Nicholas, and at 8 A.M. off the fort in St. George's Bay; landed the mail and proceeded at 10 A.M., (passed to the southward of Bona Vista), and on Wednesday the 27th at 2h. 15m. P.M. anchored off Portendic, with B B. in 5½ fathoms coarse sand and broken shells, with the following bearings,—a remarkable Palm Tree N. 65° E.; Hut on the beach S. 53° E.; Extreme of land to northward N. 29° E., off shore about three miles and a half.

On Thursday the 28th of June being the anniversary of Her Majesty's

* June 5th, draught in Hamoaze shackled to a buoy

	ft.	in.
	11	3
	12	4
By Stern	1	1

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coronation, dressed the ship with mast-head flags, and had a grand battue with G guns and small arms at targets, firing 21 shells, practice but indifferent owing to the heavy ground swell, the shells pretty fair.

On approaching and anchoring off Portendic (West Coast of Africa.)—Great attention ought always to be paid to the lead in this locality, as there is a constant indraught along the coast very uncertain in force, and there are no dangers the approach to which will not be indicated by the soundings. Having arrived in lat. 18° 17′, and with the help of a good glass discovered the Palm Tree, (it is sometimes very difficult to find), stand to the southward until you observe on the beach about two miles and a half distant from the tree, a low dark wooden hut, bring this to bear east and the palm about north-east, and anchor in 4½ fathoms, about two miles off shore.

If it be wished to communicate, the state of the beach should be observed from the mast-head, and if apparently practicable, be careful to avoid a spit to the northward of the hut as the sea breaks on it with some violence and for a considerable distance out, I should recommend in landing to use a grapnel, and veer in, as the surf sometimes increases very suddenly, particularly after twelve o'clock, making it difficult to launch the boat. The best landing is abreast the hut in the vicinity of which a few moors (Trazarts) are located, their miserable tents are about three feet high, the only furniture a mat and iron pot, in fact, it is impossible to imagine a more perfect picture of poverty and wretchedness. These people are under the sway of a chief named Abdallah well known to the gum traders under the cognomen of the "duke," and are stationed here to inform him of the arrival, and to assist in loading the vessels that are sent at the proper season from the Gambia for the produce of the gum forests in the interior; they appear to subsist principally on fish which are caught with stake nets, as they do not possess such a thing as a boat or canoe, and are very badly off for water, the wells shewn me being only holes scooped in the sand about half a mile from the beach, the contents of which were almost putrid, and savoured very much both in smell and taste to those of Harrowgate.

A little tobacco, powder, shot, needles, &c., will procure an equivalent of excellent fish, almost the only article, besides ostrich's eggs, and occasionally the flesh of what appeared to be a species of roe deer, they have to give in exchange. These moors appear to be a mixed race, dark complexioned, tall, and generally well made, with high cheek bones, and most expressive eyes; their clothing is very scanty, short leather drawers and a burnoose, being almost the sole covering of the men, the head and feet bare, all wear a gregory or amulet, round the neck, sewn in leather, and most of them had a smattering of our vernacular. I brought three of them on board with me, and like true savages they wanted nearly every thing they saw for "backsheesh," but although their wishes were not quite all complied with they went away apparently, well satisfied, after having had the inner man well fortified, and spent the night comfortably on a sail spread for them under the poop awning.

There is no appearance of cultivation in the neighbourhood of Por-

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tendic. The soil (if soil it can be called) consists almost entirely of loose sand, and presents a series of ridges and hillocks as far as the eye can reach into the interior; these are interspersed with low scrubby bushes principally the milk plant, with some of the commonest species of salt wort, sea lavender, &c. Two or three donkeys straying about appeared to find something to keep their teeth occupied; camels' dung appeared to be the only fuel, although doubtless some of the ligneous plants afford a scanty supply.

In concluding this sketch I cannot help mentioning how desirable and even necessary in my opinion a land mark would be here. It would greatly assist our men-of-war, who have to call off the place almost monthly.

I observed that where a firm footing could be obtained ashore, it was upon a concrete of the very hardest description formed of sand and sea shells from which the salt had been evaporated by the heat of the sun. I brought a piece of it on board with me as a specimen, and with so good a foundation the expense of erecting a mark twenty or thirty feet high would be trifling.

I must not omit to mention that Mr. Duncan, the African traveller, went ashore with me to act as interpreter if necessary, well armed with cutlass and pistol. His services however were not put in requisition. I should advise boats' crews to be always armed wherever a landing may be attempted on the coast.

On Saturday, June 30th, at 7h. 30m. A.M., weighed from Pontendic; at daylight on July 1st, observed the French frigate *Penelope* with the broad pendant of Commodore Baudin in tow of a French steamer. At 1h. 15m. rounded Cape Verde and saluted him with eleven guns which was returned with an equal number. Found an error in the starboard compass of half a point to the westward in making Cape Verde. At 6h. A.M. on the 3rd we lost the trade wind, and commenced steaming, using fore and aft sails, and square sails when possible, winds very light and variable with heavy rain squalls.

Temperature of Engine Room	100°
" Stoke hole	130°

On Thursday the 5th, at 5h. 30m. P.M., came to in Sierra Leone River with sandy bottom, in 15 fathoms.

	ft.	in.
Draught of water, Forward	10	10
" Aft	12	0
By stern	1	2

The *Adelaide* colonial schooner arrived at 6h. with the acting governor (Mr. Pine,) from the Sherboro. Found here the French brig transport *Le Pilote*. Employed on the 6th and 7th, taking on board coals and water, discharged the supernumeraries for this station, including Mr. Duncan, the African traveller, and his dogs and peacocks. At 6h. P.M. on the 7th weighed and steamed out of the river. At 2h. A.M. having gained an offing of forty miles to the westward, shaped a course for Rio. On Tuesday the 10th at 5h. 30m. A.M., lifted propeller, stowed anchors, unbent cables, and proceeded under sail only. The same evening the

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mids' steward, Thomas Daniel, while in a state of intoxication jumped overboard, and was drowned; lost the life buoy also; owing to the fuze not igniting. Crossed the equator about midnight of the 12th in long. 22° W.

On Sierra Leone, &c.—The beauty of the scenery in the neighbourhood of Free Town, has I think been much exaggerated. The practice of firing the country to destroy the underwood, (principally the indigo plant which grows with great luxuriance,) has given it a denuded appearance, and on the summits of the hills, the tall, gaunt skeletons of what were once magnificent cotton trees, detract much from the picturesque. But the great drawback is the want of cultivation, for the small patches of Indian corn and vegetables scattered about can scarcely be distinguished from the surrounding verdure with which the hills are clothed to their very tops. How different is this verdure from that grassy swarth close cropped by nibbling sheep of our own favoured country! Here, no signs of life or animation are visible beyond the limits of the town. One solitary house perched at a considerable elevation overlooks the gulleys which on three sides of Free Town gather at this rainy season the contributions of the surrounding hills, and pour them down, swamping the land on which it is built; its site has evidently been very badly selected.

The access to Sierra Leone is very easy; in entering the river keep close to the southern shore; "the Carpenter," is the only danger and may be readily avoided. I should recommend anchoring above the landing place at the commissariat store, the situation would be less exposed to the influence of the noxious vapour that is seen rising about sunset, and spreading like a table cloth over that part of the town called Maroon Town; there can be little doubt, that inhaling it has proved fatal to many a European, and even the natives themselves suffer from its deadly influence. The opposite side of the river is low and well wooded, and though apparently a swamp, is, I am informed, a fine table land, capable if cleared, of producing anything. It is called the Bullam's Country.

As soon as a man-of-war has anchored for the first time in this part of the world, she is beset by kroomen eager to be employed; and as the weather was extremely hot and disagreeable, pouring torrents at intervals, I engaged through two "headmen," the services of thirty-eight others at one shilling per diem each, and two shillings the headmen, to assist in completing our coals and water. The Commissariat department lending casks for the latter purpose, two launches I was obliged to hire at the rate of £1 per diem.

"Free Town" is soon seen and easily described, the most conspicuous buildings are the governor's house, barracks, and church; the two former have little to recommend them, the last is a rare specimen of the effects of colonial peculation and incapacity. For the sum it cost, in these days a moderate sized cathedral might be constructed. Most of the houses are built on the West India model, enclosed by a stone veranda which is open on the ground floor and carefully closed above by "jealouses," but although the streets are laid out with great regularity the grass growing in them, the rusty lamp posts minus the lamps, and many houses in ruins, give it a most forlorn appearance. The only indication of pros-

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perity are in the shops of the petty traders, (all blacks of course), whose wares of the most ordinary description of English goods are exposed in the open street for sale. Figures in policemen's clothes, caricatures of our metropolitan force, preserve order and are not a little proud of their dignity; it is impossible however to repress a smile at their ridiculous appearance.

In company with Mr. Pine, (the acting governor of the colony) I visited the establishment of the Church Missionary Society at Fourah Bay, and was much gratified. The principal, Mr. Jones, seemed a shrewd intelligent coloured man, full of zeal for the cause, which is indeed one of much promise for the African. Twenty young negroes are being educated here, either for normal teachers or for the church, as their inclination and abilities prompt; and who can predict the effects that may result from their exertions in enlightening their own race and spreading a knowledge of Christ in the benighted regions of this mighty continent. The trade of the colony is on the increase, the following statement shews to what amount, and it may not be out of place to mention that the navigation laws (now repealed) have been here a dead letter. It was found to be utterly impossible to carry them out without completely prostrating all trade; even the necessary supplies of food could not have been procured, had the attempt to enforce them been persevered in.

Exports	Total value	in 1834 £65,558 (Montgy. Martin, p. 544. in 1846 £125,818 (B B, 1848.) in 1847 £100,878 "
Imports	Do.	in 1834 £100,488 (My. Martin, p. 542. in 1836 £96,997 Do. in 1846 £105,368 (Pary. B B, 1848.) in 1847 £116,689 Do

The customs duties on imports amounted in 1837 to £7,720; in 1847 to £16,371; (Parliamentary B. B., 1848) the net revenue of the colony in 1847, was £20,653 4s. 9d. (Parliamentary B. B., 1848.)

The contract price of beef we found ¾d. a pound and vegetables a farthing, almost nominal in fact; fruit was to be had in profusion, pine apples from ½d. to 1d, a piece; and our davit guys when we sailed were so laden with these and Bananas that I wonder the davits were not carried away.

At 3h. A.M. on the 25th, struck soundings off the Abrolhos Shoals, 19 fathoms, soft white sand and coral, during the whole time we were in the vicinity of these shoals, the weather was squally.

At 2h. 20m. A.M, we hove to off Raza and got the steam up, but owing to the rusty state of the cylinders were unable to start the engines till 10h. 30m. A.M.; proceeded into the harbour, and at 11h. 40m. came to with small bower in 14 fathoms; banked the fires up. Found here *Tweed*, *Crescent*, and *Seagull* packet, (arrived on the 24th,) and the *Brandywine*, American frigate with the broad pendant of Commodore Stoarer. Saluted the Brazilian flag with twenty-one guns, and American commodore with eleven. At daylight on Sunday the 29th, took H.M.S. *Tweed* in tow and towed her as far as Raza (Maximum speed

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five knots and a half); Hove to under the island till noon, then returned and anchored again with the following bearings, Sugar Loaf S., Rat Island N.W.¼W., Palace, W.b.S.

At 9h. P.M. arrived H.M.S. *Cleopatra*, from Plymouth, sailed on the 14th of June.

NOTES ON NEW CALEDONIA, *by Capt. Edward Woodin, of the barque Eleanor.*

The southern extremity of New Caledonia is in lat. 22° 30′ S., long. 166° 50′ E. The land is low, and not visible from the southern part of the great reef that surrounds it; the southern extreme of the reef is in lat. 23° S., long. 166° 55′ E. New Caledonia is seldom more than eight to ten leagues in breadth, but the chain of mountains which forms the interior, extends north-west and south-east about eighty leagues. On the south-west side a coral reef extends along the whole coast, forming a steep wall to seaward, level with the water's edge, having no soundings within two ships' length of it, with 150 fathoms line. There are several passages through the reef, admitting ships of the largest size, with good anchorage inside in from 18 to 10 and 8 fathoms. The bottom is sandy near the reef, but towards the shore changes to a blueish stiff mud. In clear weather, and the sun at an altitude of 20°, a ship may be (with a look-out on the top-sail-yard) navigated up and down the coast inside the reef for nearly seventy-five miles. Vessels should be kept nearer the coast-line than the reef, as when the latter is approached, there are many spits of coral which would not be seen, were the sun obscured, until the ship was close upon them. The coast-line is mostly clear, and there are few dangers but what are visible. Inside the reef there are a number of islands of considerable size, situated about from three to four miles from the mainland, forming most excellent harbours, with a depth of water from 11 to 3 fathoms. In fact, one of these harbours to which there is a direct entrance through the reef, is a natural wet dock which would contain a number of large vessels, and a more excellent depôt for the accommodation of steamers could not perhaps be found in the world. Distant about twelve or fourteen miles in a south-east direction, fresh water may be obtained in many of the islands, and an abundance of firewood. On the mainland fresh water may always be procured, and in many places boats can enter the small fresh water rivers and fill from alongside. The north-east side does not furnish more than three good harbours, and it requires great caution in approaching them, as there is a chain of reefs fronting the whole length of the coast, with many detached, diverging from one to nine miles from the shore, with no anchorage inside of them until about 150 miles to the north-west, where the reef is continuous for some miles and forms a good anchorage.

The whole coast of New Caledonia, on both sides, has at a distance a most uninviting appearance, except about forty miles at the north-west end, where the land is thickly covered with vegetation to the water's edge. On entering the rivers, a fine alluvial country is found, and on

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the north-east side more particularly, the scenery is grand beyond description. Most of the land has evidently been formed from the washing down of soil from the high lands for ages. In some places the land is formed into small islands, with a good boat-channel between them, forming most picturesque views seen from a height. In the vallies there are many groves of the courie-pine growing large enough to make spars for vessels of 300 to 400 tons, and on the island there are many other trees of large dimensions, fit for ship-building and other purposes.

A stranger visiting this country would imagine it was thickly populated, in consequence of the natives (generally speaking two or three friendly tribes) assembling together, whenever Europeans make their appearance. That it has been thickly populated at sometime there can be little doubt, not only from the appearance of the neglected cultivation, but from statements made by the elder inhabitants. Captain Kent in H.M.S. *Buffalo*, who discovered and named Port Saint Vincent in 1803, mentioned that the natives were very numerous there; at the present time there is not twenty natives to be found all around that fine harbour. For many miles round the south end, and on the coast W.N.W. fifty miles from Port Saint Vincent, there is not a native establishment to be seen. The natives are most numerous at the north-west end of the island, and there is a considerable number residing on the adjacent islands inside the reefs on the south-west side, generally employed fishing, who are all subject to the chiefs on the main land. The whole population of New Caledonia would probably not be underrated at 25,000, although the French Roman Catholic missionaries have stated the population to be 60,000; but these gentlemen reside in that part of the island where the population is most numerous, and have not travelled much into the interior. There are now residing at Balade Harbour eleven French missionaries.

The traveller finds great inconvenience from the many different dialects spoken by the inhabitants, differing considerably at places not more than twenty miles distant from each other, yet the chiefs visit each other from greater distances and seem to converse familiarly. The language does not seem to partake of the Malayan, nor of the New Hollander's, nor of the New Zealander's, and seems to be distinct from that of any of the contiguous islands.

The climate is very salubrious, by reason of the cool south-east winds blowing from April to October. There are frequent gales of winds from November to March, accompanied with heavy rains from the north-east, the wind veering round to north-west and south-west. When it gets to the southward of south-west, the weather becomes fine and serene, and the wind settles to the southward and eastward, with moderate weather, until the change of the moon, when an alteration takes place and the same expositions of winds are observed. In the latter part of November and nearly all December, there is much lightning and heavy thunder, with vast quantities of rain, but these storms seldom last beyond thirty-six hours. At these periods the water inside the reef on the south-west side is deeply coloured, from the great quantity of

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soil washed down from the high lands all along the coast, and it is then dangerous to move a ship, unless the commander is particularly well acquainted with the various channels. In February and March, hurricanes may be looked for, but they seldom rage with the fury which they do at the Mauritius, which is in the same parallel. Nor are they so frequent as they are at that island, as several years may pass over without one being known. They commence from the same point of the compass as those at the Mauritius, and there is about the same interval of calm, but they soon resolve themselves into moderate gales. At least such has been the character of those experienced the past six years; during which time, only three have occurred.

Many of the natives live to a ripe old age, which can only be attributed to the salubrious nature of the climate, as they endure many privations from their improvidence; for although nature is most bountiful in the crops, they do not think of storing food to supply themselves during the winter months. When the harvest is gathered in, each neighbouring friendly tribe invites the other to feast with it, and in one round of feasting the whole is consumed, their only care being to reserve seed enough for the ensuing season. During the rest of the year the natives live upon the bark of trees, wild roots, and fish. The several tribes are almost constantly engaged in exterminating wars, which is the principal cause of the falling off of the population. In these wars many lives are lost, and the conquering parties do not hesitate to make use of their slain foes for food. So many men being killed in these fights, the result is that the females greatly preponderate in number. These are made to perform all the heavy work in cultivating the soil, cooking, &c., and for the slightest offence are often put to death. The men are generally tall, powerfully made, and athletic, and when used in a kind manner by European visitants, are harmless and inoffensive. They are not subject to many diseases, and those they do suffer from are generally of a cutaneous nature; elephantiasis is somewhat common among them. Like all other people in a savage state, they have a belief in spirits, and use propitiatory sacrifices at harvest, death, and other times.

Beside the wood previously noticed, the indigenous productions of the island consist only of yams, tara, sugar-cane, cocoa-nuts, and plaintains. Various kinds of fish are found in abundance around the coast, especially on the south-west side, where, in the shoal water, large and fine mullet abound, so much so, that often at night when a boat is going rapidly through the water great numbers will jump in. There are found also in the fresh water various kinds of fish, and amongst them perch and carp. The lagoons are frequented by large quantities of curlew and wild-duck. Of four footed animals indigenous to the island, there is only one, a very small rat; not one venemous reptile is to be found. The sugar-cane grows very luxuriantly. The natives use it for food, eating it in its green state. No doubt, mostly all tropical plants would flourish on the island, and not only so, but from experiments which have been made, wheat, Indian corn, turnips, and such like vegetables, are found to thrive. Cottton has also been tried, and is found to grow luxuriantly though short in the staple.—*Hong Kong Register, Mar. 2nd.*

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The American Expedition to Japan.

The following document was communicated to the United States Senate, by the Secretary of the Navy, in reply to a resolution of that body :—

Navy Department, April 5th, 1852.

Sir.—I have the honor to acknowledge the receipt of the Senate's resolution, adopted on the 22nd ultimo, calling upon the Secretary of the Navy to communicate to the Senate his opinion of the expediency of a reconnoissance of the routes of navigation in the Northern Seas, and in the China and Japan Seas, and whether any vessel belonging to the service can be used for that purpose; and, also, what would be the expense of such reconnoissance? So far as regards the expediency of the reconnoissance referred to in the resolution, I find that the files of this department contain a carefully prepared discussion of the subject by the Superintendent of the National Observatory of the date of December the 3rd, 1851,—confined, however, to the value and importance of the whale fishery in the Anadir, Ochotsk, and Arctic Seas, as the whaling grounds in the regions about Bhering Straits are called, from which I beg leave to furnish the following extracts :—

In the summer of 1848 Capt. Roys, of the whale-ship *Superior*, penetrated the Arctic Ocean, through Bhering Straits, and encountered in his adventurous pursuit all the dangers of an unknown and Polar sea. He was successful in his enterprise, filling his ship with oil in a few weeks. Influenced by the report which he brought back as to the abundance of whales, owners in the United States fitted out a large fleet for those grounds, and in 1849 Capt. Roys was followed by 154 sail of whale ships, each vessel (said to be) worth on the average, with her outfit, 30,000 dollars, and manned by thirty ablebodied seamen each. This fleet took that season 206,850 barrels of whale oil, and 2,481,600 pounds of bone. In the summer of 1850 there went up a whaling fleet of 141 American vessels, manned as above, and of a like average value. This fleet, in the course of the few weeks left for their pursuits in those inhospitable regions, took 243,680 barrels of whale oil, and 3,654,000 pounds of bone. In the current year (1851) there went up a fleet of about 145 American vessels; but their returns have not been received; partial accounts of wreck and disaster only have reached us; they are startling. The lives and property at stake there for the two years for which we have complete returns may be thus stated :—

1849—Number of American seamen	.	4,650	
Value of ships and outfits	.	4,650,000	Dollars
Value of oil taken	.	2,606,510	
Value of bone	.	814,112	
			8,070,622
1850—Number of American seamen	.	4,320	
Value of ships and outfits	.	4,320,000	
Value of oil taken	.	3,761,201	
Value of bone	.	1,260,630	
			9,341,831
Total ships in two years	.	299	
Total seamen	.	8,970	
Value of ships and cargoes	.	Dollars	17,412,453

The losses during the year 1851 have been unprecedented, so far as heard from. No less than seven sail of this fine fleet of 1851, the *Howqua*, the

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New Bedford, the *Arabella*, the *America*, the *Armata*, the *Mary Mitchell*, and the *Henry Thompson*, have been wrecked there, and left behind as monuments of the dangers which meet these hardy mariners in their adventurous calling. There are reports of other losses and wrecks; these are certain; and though several of them were lost, not on shoals, but otherwise, yet these are enough to tell of imperfect hydrography, and to show the national importance of looking to it; for it may be so, that in case of loss in the ice, the knowledge of a sheltered anchorage near, and which a survey would give, would have prevented the exposure to the ice which induced the loss. All our commerce with what is called 'the East,' is not so valuable as this was for 1849 and 1850. We see by the above statistics that in these two years more American seamen were engaged in that small district of ocean, than are employed in our whole navy at any one time; that in these two years these hardy mariners fished up from the bottom of the sea, and by their own energy created and added to the national wealth, the value of more than eight millions of dollars. And we moreover see that, owing to the dangers of the land and ice, the hidden rocks and unknown shoals, one vessel in every twenty that went therein during the summer of 1851, has been left behind a total wreck, and that the lives of their crews, or of not less than one man for every twenty engaged in that business, have been put in jeopardy, mostly from the want of proper charts. No protection that our squadrons can at this moment give to our commerce, with any of the States of Christendom, can compare with that which a good chart of that part of the ocean would afford to this nursery of American seamen, and to this branch of national industry. I learn that in lat. 64° 15′ N., long. 178° W., Capt. Middleton, of the barque *Tenedos*, of New London, discovered a shoal having only eight feet of water on it, and which was two acres in extent; that the ship *Ajax*, of Havre, was lost on a rock south of the Isle of St. Lawrence, ten miles from land; that 'the entire fleet of whalemen in the Arctic Ocean complain much that charts are wrong, that the coast is badly explored, but little known,' &c.; that 'several of our vessels have been near being wrecked by unexpectedly making land or rocks under the bows at night;' that they have found in the Arctic Circle low sand-pits, extending five or six miles out; that also, 'in Ochotsk Sea, there are hidden dangers;' that 'the *Howqua*, in 1851, was totally wrecked on a sunken rock in that sea.' 'I am also informed that the Indians are very friendly; that they wanted to trade; that the whalemen frequently went on shore,' &c.; 'that Capt. Taylor brought specimens of ores of metals from the Arctic shore,;' that 'he obtained information from the natives of the existence of gold among them, as also iron;' that when shown implements of various kinds, they gave him to understand, 'plenty in the mountains.' Such also was the case with gold. They knew the metal, and pointed as such existing among them.

With these facts before the department, I have no hesitation in expressing an opinion favourable to the measure suggested in the resolution, nor in recommending such a reconnoissance and survey as will establish accurately the position of the prominent capes, bays, headlands, and harbours. To fix the positions of the rocks and shoals that endanger the navigation there, and to examine the Fox or Aleutian Islands, would be the work of two or three properly appointed vessels only for a short time. When the season is closed for these latitudes, the same vessels could be most beneficially employed in an examination of the seas of China and Japan, and the regions thereabout, whose hydrography is so defective, and an accurate knowledge of which is becoming every day of more and more importance. In reply to the latter clause of the resolution, viz., 'Whether any vessels belonging to the service can be used for that purpose, and also what would be the expense of such a reconnoissance?' I respectfully state that this department has not at its

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command the vessels necessary for the contemplated service, unless by reducing the number of our vessels attached to squadrons on foreign service, which I by no means recommend. I am of opinion that the necessary vessels can be built at our navy yards, or purchased for a sum not exceeding 125,000 dollars; and that no additional appropriation beyond that sum need be made. The wear and tear of the vessels, the pay of the officers and crews, stores, provisions, instruments, &c., can be provided for out of current appropriations. The accompanying report from the Chief of the Bureau of Ordnance and Hydrography, and papers prepared by Commander Ringgold and Lieutenants Maury and Page, are respectfully submitted, as throwing additional light upon the subject.

I have the honor to be, very respectfully,
Your obedient servant,
W. A. GRAHAM.

Hon. W. R. King, President of the Senate.

AN ORDINANCE ENACTED BY THE GOVERNOR OF MALTA, WITH THE ADVICE AND CONSENT OF THE COUNCIL OF GOVERNMENT THEREOF.—*For making further provision for the Instruction and due Qualification of the Masters and Mates of Merchant Vessels belonging to Malta.*

WHEREAS it is expedient to make further provision for the instruction and due qualification of the masters and mates of merchant vessels, His Excellency the Governor, with the advice and consent of the Council of Government, enacts and ordains as follows:—

1. The Rector of the University, the Teacher of Navigation in the Lyceum, together with two masters of the merchant service of Malta, who shall have commanded and navigated merchant vessels for a period not less than five years, shall be appointed by the head of the Civil Government for the time being, to constitute a board in connexion with the University, to be called the Navigation Board.

2. The said Board shall be empowered to grant certificates of competency in theoretical and practical seamanship, according to regulations to be framed and published under their authority. Such certificates to be of competency for some one of the following grades:

Master of third class; Mate of vessel commanded by a master of first or second class; Master of second class; Master of first class.

A Captain of the third class, is authorized to command vessels of small burden navigating between these islands, Sicily, Sardinia, Tripoli, Tunis, and the port of Bona; that of the second class, vessels navigating within the Mediterranean, including Cadiz and the coast of Portugal, and that of the first class, vessels navigating in any part of the world.

3. Candidates desiring to qualify themselves as masters of the third class shall have served at sea for a period of not less than two years.

4. Candidates desiring to qualify themselves as mates, shall have served at sea for not less than two years, and shall have frequented the School of Navigation in the Lyceum for one year, or any other school of navigation, which the head of the Civil Government may, by public notification hereafter, duly authorize for the purpose, for such period, not being less than one year nor more than eighteen months, as shall be specified in such notification.

5. Candidates desiring to qualify themselves as masters of the second

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class, shall have served not less than two years at sea in the capacity of mates.

6. Candidates desiring to qualify themselves as masters of the first class, shall have served not less than two years at sea as mates, and shall have frequented the School of Navigation in the Lyceum for six months, at any time subsequent to their first six months service at sea as mates,—or, in default of such frequentation, shall have served at sea three years and a half in the capacity of mates.

7. No person shall be permitted to act either as mate, or as master of any class, except on licence from the Chief Secretary to Government; and no such licence shall in future be issued by government, except on the production of the corresponding certificate of competency from the said Navigation Board, and to persons of good character and reputation. The production however of such certificate shall not be obligatory for such persons as shall prove themselves to have been authorized to act as captains by any competent authority, in any other part of Her Majesty's dominions, nor for any mate of a vessel not belonging to the port of Malta, who shall apply to be authorized to command such vessel in lieu of the master of the same, who shall have resigned her command or have died, or otherwise have become incapable to continue in such command.

8. Sec. 1, 2, 3 and 4, of book VI, chap. ii, and sec. 2 and 3, chap. iii. of the said book of the Municipal Code de Rohan; and sec. 1 of the minute of the 9th of December, 1837, in as far as they are contrary to the provisions made by this Ordinance, are repealed and annulled.

Local Attraction in Ships.

It appears that this subject has at length forced itself into notice. Does or does not the compass misbehave itself from the above cause in southern latitudes. Some answer yes and others no. Where the dangerous plan of applying correcting powers to the compass is adopted we apprehend that it does generally, and it is shown so in the following letter.

Topsham, Devon, April 8th, 1852.

Sir.—I received the inclosed paper a few days since from my son Alfred Mering Sainthill who commands the *Keera*, and as the information may be useful to some of the steam ships about to proceed to Australia, I forward it to you to publish it if you think proper. The *Keera's* compasses were adjusted in Newcastle previous to her departure.

I am, &c.,
Alfred Sainthill, *Lieut. R.N.*

To the Editor N.M.

Remarks on the compasses of the Iron Steam Boat Keera from Newcastle to Sydney.—Correct as far as the equator, first found wrong in the south-east trade, October 3rd, 1851, lat. 27° S., long. 23° 52′ W., ship's head by compass S.W. true, S.W.b.S. On getting to the southward of the south-east trade, the deviation increased as we got to the eastward. In lat. 41° 21′ S., long. 33° 45′ E., the course by observation was N. 89° E.; course by binnacle compass E.b N, course by cabin compass, S.E.¼E., deviation of binnacle compass increasing. November 28th, lat. 40°, long. 82° 40′ E., steered north-east to make an east course. On Thursday, December 3rd, lat. 42°, long.

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100° E., in a heavy gale hove to, the compass frequently changed ends, sometimes continuing reversed two or four hours, and then vibrating a long time, in fact useless. They continued so until the 6th, when I reversed the poles of the antagonist magnets, and removed them about two feet further from the compass, after which we made good courses with the ship's head east, but found the compass sometimes one point wrong, ship's head north on the coast."

No correcting powers are applied in H.M. ships, nor should they be for many reasons. The amount of error is always found and allowed for. Further attention is called to the subject by the following Admiralty order.

Admiralty, May 12th, 1852.

My Lords desire to call the attention of the captains, and commanding officers of H.M. ships and vessels, to the necessity of constantly watching the deviation of the ships' compasses, caused by the attraction of the iron in ships, especially in steam vessels, and more particularly in those constructed of iron; experience having shewn that large errors are caused thereby, which not only vary in degree when approaching the magnetic equator, but in many instances, when passing to the southward of it, require the correction for error to be applied in a contrary direction to that previously ascertained. With the view of taking such further precautions as appear to be necessary to guard against the dangers arising from the above cause, my lords are pleased to direct as follows:—

1st.—All ships and vessels are to be swung once in each year, for the purpose of ascertaining the errors of the compass of the ship, also immediately on their arrival on a foreign station; or if there has been any great change in the ship's position since the errors were last observed.

2nd.—Azimuth and Amplitude observations are also to be taken at sea, for the same purpose, as pointed out in the practical rules supplied to H.M. ships, for the guidance of officers.

3rd.—Whenever ships are swung, or observations are taken at sea, a notation of the circumstance, and of the amount of error, is to be inserted in the ship's log, and remark books, and a yearly return of the local attraction of the ship is to be transmitted to this office with the quarterly returns ending December 31st, in the form at present in use.

4th.—It is always to be stated in the returns, if the compasses have been corrected by magnets.

5th.—The attention of officers is particularly called to circular No. 9, dated November 20th, 1846, with reference to the removal of iron from the vicinity of the compasses.

The Loss of the Birkenhead.—We have been favoured with the following interesting communication from one of the officers of the Cape Screw Steam Navigation Company's ship *Propontis*. It will be remembered that the unfortunate *Birkenhead* was lost on the same night that the strange circumstance took place in reference to the compasses on board the *Propontis*. "Some days before making the Cape land, on board the *Propontis*, in February, 1852, we found nearly six points difference between our standard and binnacle compasses, the standard having nearly three points west variation and the binnacle nearly three points easterly variation. On approaching near the land, the night of February 25th, we found the binnacle compass so unsteady, and oscillating so much, at times taking nearly a round turn, that we could not steer by it, but conned the ship by the standard, which remained steady."

Swinging the Great Britain.—On Tuesday this splendid craft left the

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the quay at Liverpool, to which she had been for some weeks lying, for the purpose of having her compasses adjusted by observation. This floating castle was swung to every point of the compass, and the bearings of the compasses attained to the greatest nicety.

Massacres by Chinese and Malays.

Singapore, February 3rd.

The British barque *Victory*, of London, arrived here on the morning of the 27th ult., having had enacted on board of her, one of those fearful outrages which seem to be becoming of such frequent occurence in these seas. The *Victory* was chartered to convey Chinese coolies to Callao, and having received on board 352, sailed from Cumsingmoon for her destination on the 6th December last. She had also some cargo on board, consisting of furniture, silks, preserves, &c., but it is not known whether there was any treasure.

On the 10th, between 2 and 3 o'clock in the afternoon, the coolies suddenly made a rush into the cabin and seized the arms. A party of them went on to the poop, where the master, Mr. William Lennox Mullens, was walking, and seized him, A seaman named Henry Watt ran to his assistance, but was laid hold of by the Chinese, killed, and thrown overboard. Captain Mullens got up into the mizen rigging, and was followed by one of the coolies armed with a cutlass. The captain then slid down one of the topmast backstays, and as soon as he reached the deck was seized by the Chinese, who assaulted him with cutlasses, iron bolts, &c, until he was killed, and his body thrown overboard. The second mate, named James Aronsono, and the cook, Edward Bailly, were murdered at the same time as the captain, in the fore part of the vessel. The chief mate, Mr. Vagg, was aloft on the fore topsail yard, at this time looking out for the land. As soon as the captain was killed the Chinese called Mr. Vagg to come on deck, which he did, when they led him off to the wheel and ordered him by signs, to steer the ship towards the land, threatening to put him to death if he disobeyed. Mr. Vagg steered for Point Kamboja, and some of the coolies landed there but finding it was uninhabited they returned on board. They next tried to beat up to the coast of Cochin China, but could not manage it, and then bore away for Pulo Ubi, when the vessel anchored. After taking her to various places in the Gulf of Siam, they left her, carrying off a considerable portion, of the cargo. The Chinese took all sorts of precaution to avoid detection. They burnt the whole of the ship's papers, and tore out all the leaves from the log-book up to the date of their taking the ship. No cause can be assigned by Mr. Vagg for the rising of the Chinese. They received no ill-treatment. and had only been paid an advance of a dollar each before leaving.

The *Herald*, Lawson, from Shanghae for Leith, was scuttled 31st of October, off the coast of Java, by part of her crew (Manila men), who had massacred the master, two mates, and two men: the master's wife left on board when the vessel sank It appears that five days after leaving Shanghae the crew were put upon the customary allowances, which was not agreeable to the Manila men, who began to be refractory, and went aft four times before the vessel reached Anjer, to demand more, but were refused. There were on board, Captain Lawson, his wife, two European mates, a carpenter, a steward, a cook (natives of the coast,) twelve Manila seamen, one European, (Portuguese) seaman, and a Manila boy. It would appear that the Manila men had resolved on extremities, as they told the Portuguese they intended

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to murder all the Europeans on board. The Portuguese tried to gain time, by dissuading them from using violent means, and offered to take the Europeans off by poison, which he mixed with the powdered sugar candy for the coffee. Both the captain and his wife were affected by the emetic, but only for a short time. The Portuguese, meantime, found an opportunity of acquainting Captain Lawson with what was going on, who ordered the chief officer to muster the crew every night, and take their knives from them. Captain Lawson and his officers, from that time, which was about twenty-five days before reaching Anjer, were always armed. The *Herald*, made Anjer on the 22nd of October, but did not anchor, as there were sufficient water and provisions on board to last them until they reached the Cape or St. Helena. At half-past 1 A M., of the 25th, the Portuguese heard his name called in a loud voice, and ran on deck, where some of the Manila men told him that they had water and provisions now at their own pleasure, since the captain and his officers were gone to the other world. He was sent to assist in clearing the cabin, and saw the bodies of Captain Lawson, his officers, and the carpenter, Mrs. Lawson also being there, crying bitterly. Weights were attached to the feet of the bodies, which were taken on deck and thrown overboard. The chief mate was not quite dead when thrown over the side, and he was heard to exclaim "Good God!" After the officers had been thus disposed of, the gunner (a Manila man) took command of the vessel, having two of the men as first and second officers. Six days after the murder of the officers, the Portuguese steward, and cook, were tied up, and told their last hour had arrived, and before the steward could utter a word, the person who acted as chief mate, split his head open with a hatchet, and ran him through with a knife. The other two were released, and enjoined to secrecy. The same day preparations were made to scuttle the ship, and on Mrs. Lawson entreating the gunner to take her on shore, he said his companions would not allow it. She then begged a spar should be given her, and she would commit herself to the waves on it, but this was even denied her. About 10 P M., they left the vessel in one of the boats, and she sunk so rapidly that nothing but her masts were visible a short time after. It is said that Mrs. Lawson was locked in her cabin before the men quitted the vessel. The boat reached the Java coast about six the following morning, and landed at a place called Tilankang, where they were secured and sent on to Batavia. The Portuguese cook, and boy, have been forwarded as witnesses against their companions.

LAW OF STORMS.

A letter with which we are favoured from Colonel Sir Wm. Reid, the present Governor of Malta assures us, that, the commanders of the Malta Commercial Marine have taken up the investigation of the Law of Storms, in a way which does them much credit, and there is no doubt that in a few years, through their means, and the aid of the Consuls at the various ports in the Mediterranean, we shall understand the nature of Mediterranean gales. He also informs us that the gale of the 1st of February, 1852, which damaged several of the British line of battle ships, came from Africa, the centre passing to the east of Tripoli, and somewhere near to Bengazi, on an E.N.E. course. Whilst the wind was blowing northerly at Malta, it was blowing southerly beyond Candia, over Greece it blew easterly, and in Egypt westerly.

There is no doubt that the gales of the Mediterranean follow the same laws as those of other parts of the globe.

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Nautical Notices.

Late Discoveries in the South Seas, &c.

The annexed information is published for the benefit of ship-masters trading among the islands of the South Seas. From the many vessels lately lost, it is hoped that it will be of some service:—

Island discovered by Captain Northwood of the *Tamar*, lat. 20° 20′ S., and long. 137° 10′ W., about two miles in circumference. March 13th, 1838.

A group of islands discovered by Captain Grimes in the *Woodlark*, 28th of September, 1837, lat. 9° 29′ S., and long. 171° 52′ W. Rather thickly inhabited. The *Novelty* was lost on this island.

A shoal seen by the cutter *Foster Fyans*, eastward of Lord Howe's Island, lat. 31° 56′ S., and long. 160° E.

Island discovered by a French ship, lat. 21° 39′ S., long. 138° 32′ W.

Aurora Islands, lat. 52° 32′ S., and long. 44° 18′ W.

The Rapid's Reef, according to her observation, lat. 21° 40′ S., long. 174° 40′ E.

(1st April, 1841.) Ditto ditto chart, lat. 21° 56′ S., long. 175° 26′ E.

May, 1841. Captain I. Underwood, a reef seen in lat. 15° 42′ S., long. 175° 18′ E.

May, 1841. A second reef discovered by the above, lat. 4° 40′ S., long. 161° 3′ E.

Young Phœnix Shoal, lat. 9° 05′ S., 167° 10′ E.

Ship Eucutun's Reef, lat. 18° 10′ S., and long. 175° E.

Reef seen by the *Mars*, of London, lat. 8° 25′ S., and long. 165° 32′ E.

An island seen by Captain Cole, of the *Avon*, lat. 23° 32′ S., and long. 162° 52′ E.

An island discovered by Captain Brown, of the *Ploughboy*, in lat. 3° 30′ S., and long. 176° 2′ E, surrounded by a reef eight or nine miles off shore. Inhabited.

The Harbour of Roan Kitty is in lat. 6° 52′ N., and long. 158° 24′ E.

The Harbour of Ascension being very indifferently laid down, and a great many reefs extend to the north-east of the island forty miles long.

A very extensive reef, about eighty miles long, in lat. 7° 21′ N., and long. about 156° 30′ or thereabouts—this reef the ship *Isabella* was lost upon, bound to Manila, in 1811. The latitude was observed on the reef.

The Raven Islands, a very good place of supply, discovered in 1841. Resident, John M'Vea, *Offley*, ship.

Island discovered by Captain Grimes, in the *Jean*, 1841, lat. 9° 16′ N., and long 145° 43′ E., and about six miles in circumference.

A shoal seen by the Mumford schooner, bearing S.b.W. ½ W., distance eighteen miles from Veithone's Island.

Sarah Scott bound to Manila, saw a shoal, the southernmost of the Deliverance Islands, bearing W.b.S. Latitude of the shoal by account and by the islands 10° 45′ S. and long. by chronometer 163° 12′ E.

A reef discovered by the *Cyrus*, of London, 1843, lat. 8° 43′ N., and long. 111° 40′ E., bearing S.W.b.W. of the London Reef, distance twenty miles, five miles in extent. Also, a shoal in lat. 7° 38′ N., and long. 112° E. Also a bank in lat, 7° 42′ N., and long. 111° 37′ E., the least water being 7 fathoms. Also, a continuation of breakers from the George to the Abercrombie Shoals.

A reef discovered by the ship *Thomas Dickenson*, July 26th, 1842. Position lat. 21° 32′ S., long. 168° 54′ 30″ W.; it appeared about two ships lengths,

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N.E. and S.W., the night being dark at the time, and blowing a gale of wind, very narrowly escaped shipwreck.

A reef discovered by H.M. Sloop *Favourite*. Position, lat. 23° 35′ S., long. 179° 11′ W.

An island. Lat. 15° 37′ S., long. 175° 23′ W.

S. D. Norris,
Master Brig Moa.

This list was published for Captain Norris some years ago.

42, *Porchester Terrace, Bayswater, April 9th*, 1852.

Sir,—I beg leave to send you an extract of a letter received by me from Mr. Consul Beecroft, dated Fernando Po, 29th October, 1851, giving the position of a shoal at the mouth of the Old Calabar River with directions how to clear it, which I believe may be relied on as correct, Captain Beecroft being well acquainted with the navigation of that River.

"The knoll with 2 fathoms water upon it, is due south, from the south end of Tom Shots' reef, about two miles distant. To avoid it in coming from the westward steer east in 8, 9, or 10 fathoms. If the weather is clear so as to see East Head get it north-east, then steer N.b.E. from the river of Old Calabar. All the rivers in the bights want surveying. Knolls and sand-banks get up and disappear in two or three years. Breaker Island is larger now, with trees on it. I will trace it off and send it to Sir Francis Beaufort by next conveyance."

H. D. Trotter, *Capt. R.N.*

Graham Shoal.—It appears from an examination of this shoal, on the 19th of March, by Lord Frederick Kerr, commanding H.M.S. *Scourge*, that it has not undergone any change in the depth of water since the examination of it by the same officer last year.

St. John's Newfoundland, March 24th, 1852.

Light-house at Cape Pine, Newfoundland.—Notice is hereby given, that from and after the 1st day of July next, the light at Cape Pine, on the south coast of the Island, will be changed in its character, and will thereafter exhibit a Light at intervals of *half a minute*, instead of *twenty seconds*, as at present.

Nicholas Stabb,
J. J. Grieve,
G. T. Brooking,
John Munn,
Eugenius Harvey. } Commissioners.

Tides at the Entrance of the Yang-tse-Kiang and Woosung Rivers.—*By Mr. G. B. Swain, Master R.N., late of H.M. brig "Pilot."*

As considerable difficulty is experienced in making the low land of the main on approaching this River, after Gutzlaff Island is lost sight of, and many vessels which have shaped a right course for its entrance by taking their departure from Gutzlaff, have unexpectedly been set into shoal water, either on the north or south bank, I have endeavoured to find a rule by which an allowance can be made for the tides existing in this locality, by taking the direction of the ship's head every hour, and noticing the rise and fall whilst at anchor in the "fair way," off the mouth of the river.

By reducing these observations, (the result of fourteen tides) and allowing for

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the force and direction of the wind, and the relative time of high water at full and change, it appears to be an unquestionable fact, that the tides undergo a complete revolution (in direction) during each whole tide, viz: "The first of the flood sets southerly, gradually draws round to the westward, and the last part of the tide sets to the northward. The first of the ebb draws towards the east, and on nearing low water, tends to south."

This revolving tide (if it may so be named) I have observed as far out as "Saddle Island;" it does not appear to diminish in velocity during the revolution excepting at the exact turn of tide—its least strength is about two knots, and at the springs it reaches to about five knots per hour.

The same results have also held good at all times when under weigh: and on two occasions, having Gutzlaff on a S.½E. bearing, at a distance of sixteen miles, the ship steering N.W.b.W., we dropped the Island without altering its bearing, (it is lost sight of from the deck at twenty-one miles) obliging us to haul up to W.b.S. These circumstances happened at the last of the flood. The loss of the vessels which are so frequently stranded on the north bank, may be attributed to an ignorance of the actual set of the tides, and several vessels commanded by good navigators (and on one occasion a steamer) have been swept completely to the northward of the bank, and only discovered their error when brought up by shoal water at a distance of many miles from their supposed position.

Since the same soundings continue up to the north edge of the bank, as are found in the fair channel over the bar, an attention to the set of the tides will be indispensable, and which is the only method of providing against the danger of being swept on this bank.

The difficulty in pilotage will be somewhat diminished, when running up the river with the first of the flood or last of the ebb which set on the south bank; as the soundings then decrease gradually, which would indicate an approach to the shoal.

The rise and fall of the tides, must of course be borne in mind, but cannot be depended upon with exactness, there being a considerable difference in the depth of water caused by change of monsoons, as well as by the influence of local winds, freshes, &c., independent of the change of moon.

In working up the river, no ship should be under weigh near the time of high water, especially at spring tides, as the danger will not only be greater in case of her grounding, but also by the banks being completely covered, and the eddies formed along their edges rendered invisible during the last quarter of the flood, and first of the ebb, the only certain guide for avoiding the banks is not available.

From leaving Gutzlaff, the navigator should be careful to keep near the south bank, as it is safe into 3 fathoms as far up as within five miles of "Middle Point," bearings of the point then become useful for clearing the shoal, which runs off it at about one mile and a half, in a south-east direction, and which is dry at low water. The point is discernable by a large tree (higher than any others previously seen) to the south-east of it, and when this tree bears south-west, you are abreast of the extreme point of the shoal, here, you should not approach it within 4 fathoms. Middle Point is also remarkable in having a quantity of cattle usually grazing about it. All ships bound for the river, should first make "Gutzlaff," and be particular in calculating the time of tide (high water full and change at 12 o'clock (noon). The most preferable track for making the low land is, by keeping along the north edge of the south bank. By paying attention to these remarks in steering a course, and occasionally shoaling the water to 3 fathoms, will render the pilotage easy. No vessel should attempt to run in for the mouth of the river at night, or in thick weather. When about three miles off the low land, the tides begin to hold a totally different direction: the last of the flood stream (which runs up to "Woosung," two hours after it has done on the bar) sets on the south shore, and during

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the latter part of which time the ebb is making down to the northward of the bank, forces itself across it, and sets on the south shore.

When the ebb has fairly made, the stream runs down the river, but the last part sets off the south shore, and over the north bank, taking a north-easterly direction. Too great attention therefore, cannot be paid in watching the progress of the ship when running up or down, being frequently obliged to steer two or more points different from the direct channel course.

It is customary with many ships working up the river between the shoal east of Middle Point and Woosung, to be guided entirely by the lead, tacking the first shoal coast; but this method is, I conceive, far too dangerous to be adopted as a general rule. The water shoals so suddenly, as scarcely to allow room to tack, especially in a large vessel. When Blockhouse or Brush Island is in sight, cross bearings are very serviceable, but the points of land are not sufficiently defined, to give the angles with accuracy.

Since Captain Collinson's admirable survey of 1842, both Blockhouse and Brush Islands have very much increased in size; the latter extends at least a mile to the eastward of its given position on the chart, so that in taking bearings, the most prominent parts should be observed. It is also proper to notice that the Beacon which is marked on the north bank, outside Blockhouse Island has ceased to exist, having been washed away.

When about two miles and a half from Poushan Point, the turning mark for clearing, the south bank may be seen with a glass. It is however, difficult for strangers to make out, excepting when shown to them. It is a small Pagoda, (shewing a little above a clump of trees on the south side the city) in one with a pole having a square board nailed on its top, and painted white. This pole is placed on the beach. Either this mark is kept on, or the Pagoda a little open to the northward, until the mark is on for leading over the bar into Woosung River. This latter mark, is a beacon kept between two Joss poles (on the beach) outside Fort A. The opium ships are moored on the east side of the passage off Woosung.

There are many places where the water has shoaled since the last survey. There is a patch with 2¼ fathoms on it at half flood, Gutzlaff bearing S.b.E., distance thirteen miles and a half. The water is altogether less on Woosung and Yang-tse-Kiang bars. Another bar is forming in the second reach of the Woosung River, at the commencement of the lower middle ground, and has only 2 fathoms on it, low water, spring tides, so that ships drawing more than twelve feet, are obliged to wait until the flood has made sufficiently to take them over. When ships have fairly swung at Woosung, the water has risen two feet on the bar. In the channel of this reach, the stream is not felt at the surface until the tide has one third made. Another bank is gathering near the shore on the east side of the river, below Half-way Point, not having more than 2¼ fathoms on it, at low water, where it is marked 4¼ fathoms on the chart. The deep water is on the west side.

In going up Woosung River with the flood, great caution should be used in passing the creeks, as the indraught is strong, and small banks are formed at their mouths. A bank is formed by the wreck of a sunken vessel, at a cable and a half distant from the shore, abreast the Consulate flagstaff at Shanghai. The best anchorage is above the Consulate wharf.

May, 1852.

New Light Houses.—*Bay of Fundy.*

The commissioners of light-houses for the Bay of Fundy have published for the information of Mariners, the list of lighthouses erected and lighted by the Province of Nova Scotia last year, and the description of a light on Peter's Island, in Grand Passage.

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Eddy or Sandpoint Light.—A Beacon Light on Eddy or Sandpoint, on the West side of the South entrance to the Strait of Canso and is distinguished by Two White Lights horizontally placed 25 feet above Sea Level—rise and fall 6 feet. The building is square, painted White, with a Black Diamond on the seaward side. The Point is shoal eastwardly of the Light nearly 200 fathoms, but the north-west of it is bold water, and good anchorage. The Tides are irregular, and very rapid round the Point.

The following Bearings by Compass may assist vessels passing through the Strait:—

From the Light to Cape Hogan		S. 50°	E.
"	to Western headland which intercepts the Light	S. 10	E.
"	to Bear Island	N. 32	W.
"	to Pirate Cove	N. 34	W.
"	to Mill Creek	N. 39	W.

Lat. 45° 31′ N., long. 61° 15′ W. Variation 14° 30′ W.

Arichat Beacon.—A beacon light on Point Marichi on the east side of the southern entrance to Arichat Harbour. The building is square, painted white, and shows a white light thirty-four feet above sea level, rise and fall six feet. The point is bold to and the following are the bearings of the principal Head Lights:—

From the Light to Cranberry Island Light, over Winging Point,		S. 3°	E.
"	to Winging Point,	S. 5	W.
"	to Ragged Head, North Shore, Chebucto Bay,	N. 79	W.
"	to Madam Island, east side of entrance to Strait of Canso in one with Jerry Island Reef,	N. 48	W.
"	Little Arichat Head,	N. 40	W.

Latitude 45° 29′ N., longitude 61° 2′ W., Variation, 14° 30′ W.

Horton Bluff Light.—A Beacon Light on Horton Bluff in the Basin of Mines, ninety-five feet above sea level, high water, rise and fall, forty to forty-five feet.

The building is square, painted white, stands sixty feet from the bluff, and shows a white light, which may be seen in clear weather over the greatest part of the Basin of Mines, (after passing Cape Blomidon) and above the Five Islands and up Windsor River, until intercepted by the continuation of the bluff to the southward of it.

Course to Root Island, entrance of Cornwallis River,		N. 14°	W.
"	Cape Blomidon,	N. 2	W.
"	Partridge Island (Parsboro')	N. 2	E.
"	Largest of group of Five Islands,	N. 38	E.
"	West side of river or continuation of bluff,	S. 35	E.

Port Medway Light.—A beacon or harbour light has been erected on Admiralty Head, on the west side of the entrance of Port Medway. The building is square, painted white, with black square in the centre of the seaward sides, and shows a plain white light forty-four feet above the sea level rise and fall six feet, and is visible in clear weather from Cape la Have and Palmerston Bay eastwardly and seaward, until shut in by the main land westwardly. It stands within 30 fathoms of the shore, which is bold to.

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The following bearings by compass are given to assist vessels in making the harbour.

From the Light to the outermost headland westerly,	S. 33°	W.
" Long Cove Breakers,	S. 17	W.
" South-west breakers,	S. 22	W.
" Southend Frying Pan Island and S.E. Breaker in one,	S. 60	E.

The Islands and Ledges on the east side of entrance are on line of these courses:—

From Light to La Have Rock,	N. 72°	E.
" South Point of Indian Island,	N. 77	E.
" Cape La Have over the point of Indian Island,	N. 76	E.

Latitude 44° 6′ N., longitude 64° 34′ W., variation 14° 33′ W.

Peter's Island Light.—The light beacon erected on Peter's Island, at the south entrance of Westport, on the east side of the Bay of Fundy, shows two white lights, horizontally placed, (to distinguish it from Brier Island Light) at an elevation of forty feet above high water mark. This beacon is intended to lead vessels into Westport, or through Grand Passage, and will be seen on the approach from seaward and St. Mary's Bay, until shut in by S.W. point of Brier Island, bearing from it S. 54° W., and Dartmouth Point, on Long Island side, S. 25° E., and on the north side, (coming out of the bay,) between N. 11¼° E., and N. 25° E. When in the passage, or fair way through, the light will be seen all round, and can be passed on either side; but the Eastern Passage is the deepest and widest and is recommended to strangers. The best anchorage is on Brier Island, or western side of the Harbour.

Latitude of Peter's Island	N. 44° 15′
Longitude of ditto	W. 66 19 30″
Variation	16½ W.

Rise of Tide, 19½ feet. Course to Cape St. Mary's, S. 12° E., distant twelve miles.

S CUNARD,
J. P. MILLER,
J. Mc'NAB. } *Commissioners of Lighthouses for Nova Scotia*

THE ARCTIC EXPEDITION.

Ships	*Gns.*	*Mn.*	*Commanders.*	*Route.*
Erebus(sc)	3	69	Capt. Sir J. Franklin C.B.	North West.
Terror(sc)	3	68	Captain Crozier	North West.
Enterprise	4	68	Captain Collinson, C.B.	Behring Strait.
Investigator	4	65	Commander M'Clure	Behring Strait.
Plover	4	52	Captain Moore, to be superseded by Com. M'Gwyre.	Behring Strait.

CAPTAIN BELCHER'S SQUADRON.

			h.p.		
Assistance	2	60		Capt. Sir E. Belcher	Sailed, April 21.
Resolute	2	60		Capt. Kellett, C.B.	Do.
North Star	3	40		Com. Pullen	Do.
Pioneer(sc)	1	30	40	Com. M'Clintock	Do.
Intrepid(sc)	1	30	40	Lieut. Osborn	Do.

United Service Gazette.

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H.M. steam-sloop *Desperate*, Lieut-Commander Stevens, arrived at Holyhead on the 13th of May, with despatches and letters from the Arctic expedition, under Sir Edward Belcher. The despatches reached the Admiralty yesterday.

The expedition having left Stromness on the 28th of April, was towed by the *Desperate* and *Basilisk* as far as lat. 60° 11′ N., long. 24° 4′ W. The weather at this time was exceedingly boisterous, and for several days the whole of the ships were knocking about, without being able to have any communication with each other; but on the 8th inst. the gale moderated, and the two steamers then parted company, after receiving the final directions of Sir Edward.

The Arctic ships were last seen steering for Cape Farewell with a fine breeze.

On the 5th inst. the expedition experienced a very severe gale, in which the *North Star* lost one of her cutters and smashed another.

CAPTURE OF PIRATES BY H.M S. VIRAGO.—*From the United Service Gazette.*

THE Chilian colony planted at Fort Bulnes is used for penal purposes, and, including the garrison with the prisoners, the last accounts gave the entire population at 688 persons. Near the close of December a mutiny occured there, headed by a Lieutenant. The governor, a superior man named Munoz Gamero, escaped with his life, in company with the priest and a few more, to the other side of the straits. There they wandered about for many days, living on shell-fish, and suffering every hardship. At length they were compelled by want to return to the colony. Instead of being treated with compassion they met with the most merciless cruelty. A fire was kindled to burn the governor alive. He begged to be spared such a horrible death, asking that he might be shot instead. This request was granted; but after shooting him they burned his remains, dancing and singing the national hymn around the fire. An American vessel, the barque *Florida*, arrived while the governor was wandering in such distress. Immediately she was siezed, the owner, Mr. Shaw, of New Orleans, who was on board, was shot without any provocation, and the captain was spared only that he might navigate the vessel. Also a British vessel, the *Eliza Cornish* anchored on her way from Valparaiso for England, having a cargo, and nearly 100,000 dollars in treasure. She too was seized and pillaged, and the captain named Talbot, the mate, and the owner's son, were shot, having first been put in irons. After the governor returned and had been murdered, these miscreants set sail. Some of their own company, however, soon rose against the leaders, bound them, and directed their course for a Chilian port. When the news reached Valparaiso the Admiral despatched the *Virago*, Captain Hayes, and *Thetis*, Captain Kuper, to capture the mutineers.

Her Majesty's steam-sloop *Virago*, Commander W. H. Stewart, was at Valparaiso on the 28th of February, having returned from a successful cruize in the Straits of Magellan, in search of the murderers of Governor Munos, the Chilian Commandant at Port Famine.

It will be remembered that we lately noticed the *Virago's* arrival on the Pacific Station, and that her passage through the Straits of Magellan was one of unusual tediousness and difficulty, in consequence of the very unpropitious weather which she encountered.

It appears that, during her detention there, she touched at Sandy Point

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(near Port Famine), and her officers and crew experienced (apparently) the utmost civility from the second in command, one Cambiaso, who stated that the governor was ill, in consequence of which the medical officers of the steamer attended a man who was palmed off upon them as the actual commandant.

Nothing on Cambiaso's part giving rise to the least suspicion, the *Virago*, after coaling, left for Valparaiso, where she arrived on Christmas-Eve. The mail-steamer *Lima* coming in a few days subsequently, brought some people who gave a frightful account of the murder and pillage that had been committed at Sandy Point, both before and after the *Virago's* visit, upon which news she was again sent to that locality, with orders to search everywhere for Cambiaso and his associates.

It gives us much pleasure to record the successful cruize of this vessel, and furnishes another instance of the energy and ability of our officers and seamen. She left Valparaiso on the 16th of January, and touched at Conception, Valdivia, and San Carlos (Chiloe); arrived in the Straits on the 25th, and proceeded at once for Sandy Point, but on reaching it they found the settlement abandoned. They then returned to the westward, keeping a sharp look out as they passed the various creeks and bays. When near Cape Providence, the mast-head man hailed, "Sail! O!" and soon after a vessel was descried working along shore. On approaching her she was at once recognized as being one of the schooners formerly seen at Sandy Point, and which had been seized by Cambiaso, and her owner murdered, and showing no colours, a 32-pounder shot was sent so close to her that those on deck let fly everything by the run. Two boats were immediately despatched well armed, with orders for her instant surrender. She had nearly 200 people on board in the most filthy state; the chief scoundrel being Briono, one of the officers belonging to the colony. On first seeing the steamer he took her for a merchantman, and proposed allowing the schooner to foul her (as if by accident), when the troops below were to leap on deck and massacre every one they found; but when he saw that she was no "game," the mate, an Englishman, who longed for his liberty, proposed allowing only the crew to remain on deck, and by merely speaking the *Virago*, they would probably pass on without further inquiry. This, however, was only permitted by Briono, on condition that a Chilian, who knew our language, should listen to what the mate said, and if he gave the least signal as to her being piratically in possession, he was to be shot at once. These rascals were stowed away below and well secured, and the steamer then proceeded to San Carlos, in search of Cambiaso, where they had the good fortune of finding him. The American schooner which he had seized appears to have taken his fancy, especially as she had 100,000 dollars on board; but his treatment to those who accompanied him, led them to make him a prisoner, and he was accordingly handed over to the *Virago*, well ironed, and put down into the "slop room," and in this state was safely conveyed to Valparaiso.

After capturing the first schooner (whose cargo consisted of silver ore, valued at 30,000 dollars), the *Viragos* learned the narrow escapes they had on their former visit at Sandy Point. Cambiaso, who at that time was so civil, had actually ballotted for the destruction of captain and officers, during the few minutes which he kept them in his waiting room, but Providence foiled his plans by putting him in the minority on four different trials; three times by three only, and the fourth by four, on which it was decided that they should be provided for in another way. Had he succeeded in his first idea, they were to have been seized, their eyes put out, and then shot, he having actually prepared the irons for securing them, when they were laughing and talking in his room. His next notion was to poison the whole ship's com-

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pany, by making them a present of some fresh meat well seasoned for the occasion, but on the apothecary of the settlement refusing to act, he fell into a voilent rage, and called his associates a cowardly set of scoundrels It appears that it was by this man's respect for the English, that their lives were spared.

Immediately on the *Virago's* departure he took the two vessels, the master of the English one declaring defore his death, that God would revenge such atrocities. Munos, the govenor, together with the priest and some others, had been murdered only the day before her arrival, but no one dared breathe a sentence of what was going on. Munos was a naval officer, and it is said that he served in the *Caryafort*, as a probationary midshipman. He was a fine generous, and intelligent young man, and greatly beloved by all who knew him.

From all the circumstances of the case, the trying nature of the service upon which this ship has been employed, and the successful result of their mission, we do sincerely trust that their lordships will show some decided mark of their approbation for the zeal and activity displayed by Captain Stewart and his ship's Company. We understand that Admiral Moresby has written an official despatch, highly commending the *Viragos*, and which we cannot doubt will be duly noticed in official quarters. The re-capture of two vessels with their valuable cargoes, and clearance of the straits of such a horde of piratical villains, are services of more than ordinary occurence, and richly deserve the attention of our government.

Queen Adelaide Naval Fund.

It is greatly to be regretted that the Families of by far the largest portion of our Naval Officers, being reduced to great distress by the death of him whose Professional Income supplies their only resource, is not sufficiently known. They form a distinct class of sufferers, which the numberless charities of a benevolent Public for the relief of the Indigent Poor cannot reach; because their former position in society makes it impossible for *them* to sink suddenly into the habits of such as are born to Poverty and Labour,

The Queen Adelaide Naval Fund was established at the death of the late lamented Queen Dowager, to meet in some measure the existing want, made so doubly urgent by the loss of that gracious bounty which so largely ministered to the necessities of the Sailor's Widow and Orphan; and dedicated to Her Memory, in the confident assurance that the foundation of such an Institution would be hailed by all classes, as an opportunity of testifying at once a Nation's gratitude, to a service which is avowedly their greatest glory and their individual respect and affection for Her who rendered a Princely Station, still more illustrious by a princely bounty. Our readers will be gratified to learn that a bazaar for the sale of ladies' useful and ornamental work, will be held (D.V.) for the benefit of this institution, at the Royal Hospital, Greenwich, on the 29th, and 30th, of June, under the distinguished patronage of Her Most Gracious Majesty the Queen and H.R.H. the Duchess of Cambridge.

Portsmouth Sailors' Home.—For the week ending March 26th, 1852 Inmates, entered 857; left, 832; remaining 25.—Chas. A. Johnston, Superintendent.

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FALMOUTH:—We are happy to learn that the Sailors' Home at Falmouth has been opened since our last number. It is a very remarkable fact attending this circumstance, that a brig, with a cargo of tobacco on fire, ran into Falmouth on the same evening, and was destroyed. Her crew were the first to find an asylum in the New Home, and but for that might have passed the night anywhere in the streets. So timely a provision for them is remarkable.

NEW BOOKS.

A DIRECTORY FOR THE NAVIGATION OF THE PACIFIC OCEAN, *with descriptions of islands, &c., from the Strait of Magalhaens to the Arctic Sea and those of Australia, its Winds, Currents, and other Phenomena. By A. G. Findlay.—Two parts.*—Laurie, 1851.

AT length the Great South Sea has a Directory, to which the seaman who is bound there can appeal for instruction, and all the information to be obtained regarding it. The work is divided into two goodly sized volumes, in which authorities from all countries are made to contribute their information. A condensed view of all the principal Pacific navigators appears as a useful introduction to the work, containing historical notices of much interest. Copious and extensive as is the information which it contains, it is as yet only a beginning; but it is a very good one, and one which cannot fail to become a receptacle for future accounts of discoveries. We do not therefore cast a single critical glance into its pages, throughout which we perceive extensive extracts from our own; but we close it with some feeling of regret that its cost will yet be a formidable barrier to its circulation, and will assuredly prevent it from being found in every ship that visits the vast ocean on which it treats.

We had almost omitted to add, that it is accompanied by a chart including the whole ocean, from the shores of America to those of Africa, consisting of twelve sheets of double elephant paper, forming a complete view of the whole Indian and Pacific Oceans.

THE TRUE PRINCIPLE OF THE LAW OF STORMS, *practically arranged for both hemispheres: By James Sedgwick, &c.*—Partridge and Oakley, London.

IF we wanted a proof of the increasing attention to the subject of hurricanes, we might find it in the additions lately made to the works on the subject by the Hydrographic Office of the Admiralty, Mr. Birt and Capt. Sedgwick,—besides new editions of the standard works of Reid and Piddington. Mr. Sedgwick zealous for the safety of his brother seamen, has contributed his share towards arming them with the means of dealing with their subtle enemy, and very properly insists on their finding out which side of the hurricane they are on when first assailed.

He goes further indeed, and would have them determine their distance from the focus *if they can*, by a course and distance and two bearings of it. It is true much depends on the former, but that again depends on the direction in which the focus is moving, for in the same hurricane at two different parts of its track, (say the earlier and later,) the change of the wind will take place in the same quarter of it in opposite ways. There is much for consideration in the freaks of the hurricane; but seamen are now looking into these things for themselves, as they should do, and Capt. Sedgwick's book will help them.

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New Charts, &c.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry.

	s.	d.
South America, North Coast, (Sheet 1,) Trinidad to Surinam, 1852, *various authorities*	1	6
" (Sheet 3,) Cabo de Norte to Maranham, 1852, *various authorities*	1	6
Pacific Ocean, Papau or New Guinea, (in 5 Sheets,) *Captain Owen Stanley, F.R.S., R.N.*, 1850, each	2	0
Tasmania, Port Davy, *Mr. P. Going, R.N.*, 1850	1	0
Sailing Directions, &c.		
Java with Gaspar and Banca Straits, *Lieuts. Baron Melville, and Smits*, Royal Danish Navy.—2nd Edition, 1852.	3	0
Banca and Gaspar Straits, *Lieut. Smits*, Royal Danish Navy, 1852 ...	0	9
Great Circle Sailing, 4th Edition, 1852	1	0

Edward Dunsterville, *Master, R.N.*

Hydrographic Office, May 22nd, 1852.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory From the 21st of April, to the 20th of May, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Themometer in the shade.				Wind. Quarter		Strength		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min	Max	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
		In Dec	In Dec	°	°	°	°						
21	W.	30·12	30·06	45	53	27	55	SE	SE	2	4	b	bc
22	Th.	29·88	29·86	51	57	35	59	NE	E	2	5	bc	qbc
23	F.	29·90	29·92	53	60	41	61	NE	NE	3	6	bc	qbc
24	S.	29·96	29·92	46	49	40	50	E	E	6	8	qbc	qb
25	Su.	29·92	29·92	48	48	34	52	E	E	5	3	qbc	o
26	M.	29·96	30·00	50	58	34	60	NE	E	3	4	b	b
27	Tu.	30·16	30·16	46	48	32	52	N	N	2	2	o	o
28	W.	30·18	30·10	50	60	32	62	SW	SW	1	2	bcm	bcmr 4)
29	Th.	29·86	29 80	54	60	45	61	SW	SW	3	3	or (1) (2)	op 4)
30	F.	29·62	29·56	57	62	51	63	SW	SW	2	3	o	bcp 4)
1	S.	29·77	29·83	47	53	44	54	N	N	2	3	o	bc
2	Su.	29·99	30·03	46	50	37	51	N	N	4	4	bc	bc
3	M.	30·11	30·12	44	54	31	55	NE	NE	4	3	bc	bc
4	Tu.	30·20	30 17	43	53	31	55	NE	NE	3	3	bc	bc
5	W.	30.23	30·23	47	54	33	56	N	NE	2	2	bc	bc
6	Th.	30·26	30 22	50	53	36	54	N	NW	2	2	bc	bc
7	F.	30·12	30 08	53	61	42	62	SW	SE	1	1	bcm	bcm
8	S.	30·08	30·08	60	71	45	72	W	W	3	3	bcm	bcm
9	Su.	30·04	29·99	62	72	48	73	SW	W	3	4	bc	bc
10	M.	29·94	29 92	59	57	47	63	SW	SW	4	4	bc	od 3)
11	Tu.	29·88	29·94	47	58	45	60	SW	SW	6	5	qbcprh (2	qbcprh 3
12	W.	29·70	29·70	52	58	47	60	SW	SW	4	4	or (2)	bc
13	Th.	29·75	29·75	58	58	49	60	SW	SW	4	6	bcp (2)	qbc
14	F.	29·62	29·76	53	58	50	59	W	W	5	7	qbcp 1)	qbcp 3
15	S.	30·12	30·10	54	61	42	62	W	SW	3	3	bc	bc
16	Su.	29 86	29·86	62	71	45	72	SW	SW	2	2	b	b
17	M.	29·88	29 84	56	57	52	58	SW	SE	1	1	or 2)	otlr 4
18	Tu.	29·66	29·66	58	66	48	68	E	E	2	3	bc	bcp 3
19	W.	29·85	29·91	58	62	49	63	SW	S	2	3	bc	bc
20	Th.	30·03	30·02	59	66	47	67	NE	E	1	1	bc	or 4

April, 1852.—Mean height of the barometer = 30·093 inches; mean temperature = 45·3 degrees; depth of rain fallen = 0·60 inches.

Hunt & Son, Printers, 6, New Church Street, Edgware Road.

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THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

JULY, 1852.

Proceedings of "The Royalist," on the Coast of Palawan.

After leaving Hong Kong in April last, we made, on the 29th, the Pratas Shoal, and passed to the S.W. of it, keeping as close as prudence would permit to the edge of the reef, having no bottom with 40 fathoms. Pratas Island is very low, and, when approached from the westward, the most remarkable feature is a tree, which rises above the general level in the body of the island. Seen from the S.W. the island appears to be separated in two nearly equal portions; the eastern one being high and wooded, the western one a flat sand with long grass growing upon it. Shoal water extends S.S.E. from the island; but I do not think (from superficial observation) so far as represented in the charts; viz., six miles.

Observations in passing place the tree above-mentioned in lat. 20° 40′ 5″ N., and long. 116° 41′ 15″ E. of Greenwich, or 1° 15′ E. of Wellington Battery, Hong Kong.

Masters of ships cannot be too cautious when passing the neighbourhood of this shoal, for if the weather be not clear, they would be upon the edge of the reef before the island is discovered. As a general rule, they ought always to pass to *leeward* of it; for experience proves how quickly the current follows the direction of the wind; the velocity of the former being proportioned to the strength of the latter.

Leaving Manila on the evening of the 9th of May, we experienced when off the entrance of the harbour the first burst of a westerly gale,

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that lasted until the 16th, and which on the 14th obliged me to bear up for Port Miraveles, where we found several vessels taking shelter.

As soon as the gale abated, we left Port Miraveles for the north extremity of Palawan, and arrived off Observatory Island on the 22nd of May. This being the position selected last year, as suitable to commence the survey, for either sides of Palawan, and to which a meridian distance was measured, and found to disagree considerably with the position assigned to it on the chart, we remained a day in order to corroborate the longitude previously determined. As the results of this and last year's observations agree within ·2 of a second of arc, I conclude the north part of the Island of Palawan is placed on the chart about twelve miles to the eastward of its proper position.

On the 24th we sailed from Observatory Island, and anchored the same afternoon on the west side of Palawan, opposite a bay, that appeared the most eligible I had seen in which to measure a base and commence our operations on the coast.

Being favoured with remarkably fine weather, we were enabled by the 28th to get twenty miles down the coast, where we anchored in the neighbourhood of a place called Bo-quet, the first Spanish settlement on this side of the island.

The village of Boquet (it does not appear on chart) contains a population of 200, exclusive of women; it is very prettily situated in the bottom of a deep bay, formed on the west by a large island, and immediately under a precipitous limestone cliff, which falls from the spur of an adjacent mountain.

The head man of the village is a native of Manila. All the bird's-nests, bee's-wax, &c., that are collected are brought to him; and he appears to monopolize the traffic for some miles along the coast. Rice, tobacco, and coffee, are grown for home consumption and export: bee's-wax, bird's-nests, tortoise-shell, and trepang, are collected for exportation.

The group of islands fronting this part of the coast is very remarkable, and cannot fail to strike a stranger as such. The sides of the islands, which are perforated with caverns, present bare limestone cliffs of every variety of tint. They rise abruptly from the sea, frequently overhanging the perpendicular, and their bases have all been undermined by the action of sea-water to the extent in some places of fifteen or twenty feet. The caverns are accessible only to the adventurous natives in quest of bird's-nests. They ascend the cliff (perfectly naked, carrying a torch, and secure the nests in a piece of cloth wound round the head) and by means of rattans fastened to small lengths of bamboo, which they contrive in a marvellous manner to toggle into the crevices of the rock.

While at anchor off Boquet, during the period of the change of moon, we experienced a very heavy gale from S.W., which lasted four days.

Leaving Boquet on the 4th June, and surveying the outer groups of the numerous islands which lie off this part of the coast, we anchored on the 7th on the east side of an island called Saddle in the chart, lat. 11° 9′ N., and close to the northern entrance of Malampaya sound.

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As we were nearly on the parallel of a deep bay, which occurs on the eastern coast of this island, and in the S.W. extremity of which the Spanish settlement of *Tai-tai* is situated, I conceived the idea of endeavouring to effect a communication with that place by making a journey across the island; which, if accomplished, would give me a good insight into the topography of the country, &c. Fortunately for my plan, I fell in with a native, from whom it appeared that it was quite practicable. He readily enlisted himself as our guide; but to take the shortest route across, and prevent the necessity of sleeping in the jungle, it was requisite to go in a boat and disembark at a place called Pancol, distant about twenty miles.

Accordingly the following morning a party left the ship at day-break, with three days' provisions; and after a long pull arrived at Pancol about noon.

Pancol is the second Spanish settlement on the coast, and contains a population of 50, exclusive of women and children. It is situated on the eastern shore of an extensive sound, (lat. 10° 53′ N.,) and bears E.N.E. from the high table land of Malampaya.

Here we were told we could shorten our journey by pulling five miles further in a south-easterly direction, and disembarking at the head of a mangrove creek, running well in to the body of the island; but if we did not care about passing the night in the jungle, we could start at once for Pancol. We adopted the former, and arrived at the point of debarkation at 8 P.M., leaving our boat to take shelter for the night at a stockade that commanded the entrance of the creek.

After wading through a swamp entangled by mangrove-roots, we emerged into somewhat clearer ground, and then soon came upon a foot-path. This, however, was difficult to preserve, owing to the thickness of the underwood. Ultimately we gained a clear path, which led in a south-easterly direction through an open tract of country; then bending to the eastward, it passed over some rising ground and took the direction of the dry bed of a rivulet between two ranges of hills. The soil in the body of the island is of a sandy description, and the long coarse grass, which is so perplexing to the clearers of land at Singapore, grows in luxuriance here.

The highest point ascended crossing the island, was 110 feet above the level of the sea. We arrived at Tai-tai at sunset, very much to the astonishment of some of our former acquaintance, who immediately recognized us. We were received with the greatest hospitality by the Spanish authorities, some of whom we had seen when we visited the place last year.

They informed us that their gun-boat squadron had been engaged with four piratical prahus in the neighbourhood of Tae-boo-loo-lu, the latter being the aggressors, which resulted in the total defeat of the pirates; but with a loss on their side of one gun-boat and her crew, blown up.

We left Tai-tai the following day at noon, and returned by the same route.

On our arrival at Pancol, at 5 P.M., we found the village in a state

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of excitement from a report brought by one of their own boats that seven large pirate prahus were in the neighbourhood. Being twenty miles from the ship, and weather unfavourable, we abandoned the idea of proceeding further that night. The report of the pirate fleet also being in the neighbourhood influenced this determination, as they could be here for no other purpose than to make a descent upon Pancol, in which case half a dozen English seamen would do more to disappoint them than the whole village with their stockade and swivels put together.

We bivouacked on the beach in advance of the village for the night, the inhabitants of which, from the noise they made throughout it, relieving us of the necessity of keeping a look out. Daylight appeared and we set out on our return to the ship.

The extent of Malampaya (through which we had to pull) including the Endeavour Strait, is twenty miles in a north and south direction, and averages eight miles in an east and west. Its resources for giving security to any number of pirates, are greatly owing to the quantity of islands of various sizes contained in it, most of the shores of which are broken by mangrove creeks, the entrance being imperceptible until close to, on account of the sameness of the foliage.

We had only proceeded about five or six miles, when three boats, pulling a number of oars, were discovered steering in a direction to cut the gig off. The fact of these being the light detachment of the pirate fleet, admitted of little doubt in my own mind, and as they were evidently bent on being the aggressors, I pulled towards them, thinking the display of an English ensign might have the effect of altering their intentions, failing in which, it was my determination to become the attacking party, as I considered the moral effect would be greater, and our chance of success against such a superior force much augmented by it. This movement on my part had not the effect anticipated; they merely slackened their speed and closed upon the centre boat, in order that they might be better supported by five large prahus, which now made their appearance from behind a small island.

Their true character now became manifest. The large prahus (each carrying from 50 to 60 men, with their fighting stages erected over the rowers, exhibiting a formidable appearance) advanced in open order, in the form of a crescent, apparently with the intention of hemming us in. At this juncture we discovered the ammunition to be damp, which was owing to the torrents of rain that had fallen during the night and afternoon of our crossing the island.

Considering we were fifteen miles from the ship and the channel difficult to identify under the most favourable circumstances, I deemed it prudent to make the best of our way to the vessel, and as they were sure to follow, it would place me in a better position to effect their destruction, by opposing them with an adequate force. Accordingly we bore up, and being favoured with a light breeze, which reached the gig before it did them, we were enabled, much to our satisfaction, to widen the distance between us a little.

The chase now became general, and witnessing the effect the lofty

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sails had upon the large prahus, frequently damped the hopes we entertained of reaching within sight of the vessel before they could overtake us. The pirates, seeing the advantage they were gaining, opened fire with their setahs, and followed up each discharge with a hideous yell.

Their shot fell wide and beyond us. We had now arrived within three or four miles of the ship, when the pirates (probably suspecting the proximity of the vessel) suddenly lowered their sails, after nearly two hours' chase, and came to in the middle of the strait. Making the best of our way on board, the signal was thrown out—"Man and arm boats"—immediately the ship hove in sight. A short period sufficed to see the whole of our boat-force, under the command of Lieut. Pasco, retracing the gig's track, and the ship under weigh, worked by a few convalescents and boys, endeavoured to get to the southward for the purpose of blockading the only available channel known to us by which they could possibly get to sea. Light adverse winds prevented the ship from taking up the desired position until midnight, when the boats came on board, after a long pull, mortified from want of success.

At daylight the boat-force was again on the move, and we communicated with Pancol, now only nine miles distant, in hope of gaining some intelligence of the whereabouts of the pirate fleet.

The inhabitants were desired to communicate with the authorities of Tai-tai, and acquaint them with the circumstances, which, if energetically responded to, would bring the gun-boats round the north extremity of Palawan, and probably cut them off on their way to the northward, as I think our presence had the effect of driving them in that direction.

The pirate fleet (which we now left behind us, having other work on hand) was estimated to consist of 400 men, disposed in eight prahus; a force sufficient to devastate any portion of country in this neighbourhood, and consign its inhabitants to perpetual slavery.

I have entered more fully into this subject than I should otherwise have done because the impression appears to be gaining ground that there are no such persons as pirates in these seas, whereas I know both on the east and west coasts of Palawan the people are kept in constant dread of them: and I only regret the opportunity was denied me of saying to them—"Hitherto shalt thou come and no further."

As the coast to the southward of Malampaya recedes and forms a deep bight very much exposed to this monsoon, we pushed on for *Oolongan Bay*, lat. 10° 10′, and made a survey of it on a large scale.

Oolongan affords excellent shelter from all winds, and is easy of access. The charts give very inaccurate representations of its western shore, with the exception of Mr. Crighton's; but even this gentleman appears to have greatly exaggerated the dangers in approaching the bay. The water is deep for common anchorage 18 and 22 fathoms; but a greater drawback exists, viz., the absence of fresh water. The only spot in the neighbourhood where it can be obtained, is in Shingle Bay, seven or eight miles to the north-eastward of the anchorage, with 28 fathoms as close as it would be prudent for a ship to lay. In the S.W. monsoon it is much exposed, and the heavy swell rolling in upon

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the coast, frequently renders landing impracticable. *The Royalist* was compelled to water in this bay, and I must say my mind was relieved when the operation was over.

We met with a disaster here which affected our surveying operations during the cruise, and will continue to do so until assistance is obtained. When climbing a small island (*Three Peaks* on the chart) at the entrance of the bay, the surface of which was composed of very loose rock, a portion of it gave way from under the man who was carrying an instrument, he was precipitated 30 feet, when providentially his fall was arrested by a slight projection on the edge of a cliff, one foot beyond which a perpendicular fall of 60 feet was beneath him. The instrument, which had acquired considerable momentum from the first fall, bounding over his body when in this position, was broken to pieces on the rocks below, and most of the fragments lost in the water.

There are three men belonging to Bo-quet settled about 2½ miles up a small river, called Ban-ha-ly, which empties itself into the south extremity of the bay. These men compel the aborigines to collect bee's-wax, and when sufficient is stored, it is sent to Bo-quet.

The eastern shore of Oolongan Bay is distant only 4 miles from the coast on the opposite side of the island; the old charts make it 14 miles.

Leaving Oolongan Bay the 1st of July, and prosecuting the survey on the coast, we arrived off Long Point, on the 12th. (lat. 9° 40′.) Beyond the details of our departure nothing interesting occurred. One rather remarkable incident however may be worthy of mention. The coast we had just surveyed, to all appearance was perfectly destitute of inhabitants, and it was thought we had arrived at that point where we knew a transition of races takes place; Lieut. Pasco however discovered a native from the boat when surveying, and as this was rather an unusual phenomenon, he was anxious not to lose the opportunity of communicating.

The only attire worn by the native was a dirty description of white shirt, of which he soon divested himself, for the purpose of displaying a "flag of truce." Mr. Pasco, much to his astonishment, found his own name on the article, and immediately recognised the shirt as one he had disposed of last year, when on the east coast, at Port Royalist.

We were detained several days at Long Point, riding out south-westerly gales, which was the first indication we had of the south-west monsoon. Here is a small settlement, called Apor-ru-wan, they are chiefly Boquet men, and live in scattered huts extending over a large area of ground. They cultivate rice, maize, sweet potato, tobacco, and an inferior description of cotton, of which they manufacture, and colour with native dye, the coarse cloth usually worn round their loins.

Bee's-wax and tortoise-shell are collected for exportation to Boquet. We were informed we could go to Port Royalist, but that it would take four days and nights in the jungle to accomplish the journey.

Apor-ru-wan is the last settlement of the Manila people, on this side, and it would appear the line of demarcation between the Christian and Mahommedan races, crosses the island in about this parallel. They spoke in very disparaging terms of their southern neighbours, and

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told us we should not be able, after leaving Apor-ru-wan, to go about in our small boats, as we had been accustomed to do to the northward, for "there were plenty of Mooros (pirates) there." Quitting Long Point on the 19th, we arrived off *Maltar-nat*, lat. 9° 17′ on the 2nd of August. The survey of the intermediate coast being much retarded by bad weather. Maltar-nat (or Tobagoo as it is called in the chart) is situated on the bank of a small river, which disembogues on the eastern shore of a deep bay indenting the coast in a southerly direction. It has several small islands to the N.W., and one north of it, which form anchorage in either monsoon.

The bay is difficult of access to a stranger, owing to the extensive reefs which project from the island forming the channel into it. It was our misfortune to have a foul wind in, and although on the day previous, the precaution had been taken to sound the bay, we nevertheless discovered a rock in the very centre of the channel by striking upon it.

The Sultan, as he styles himself, of Maltar-nat was exceedingly hospitable; his boats boarded us when at a considerable distance from the place, and they were very anxious that we should understand they were great friends with the English. They presented a port clearance from Labuan, and knew Sir James Brooke very well*. The sultan supplied the ship's company most bountifully with provisions, which was a welcome adjunct to their usual salt meat meals, for the whole coast is very deficient in supplies, and we never had fresh meat, &c., from the commencement to the end of our cruise.

South of the latitude of 10° the navigation of the coast is dangerous,

* The influence of Sir James Brooke, had even extended to the shores of Palawan, from Borneo. Our reader is aware that this gentleman was entertained at a public dinner at the London Tavern, on the 30th of April last; on which occasion, the chairman, R. W. Crawford, Esq., read the following letter from Lieut. Pasco, an officer mentioned above, who had been compelled to leave the *Royalist*, for the benefit of his health.

10, *Wharton-street, Pentonville, April, 30th*, 1852.

SIR.—Just hearing that you are to preside at the dinner to be given to him whom all honest men delight to honour, I venture to relate to you a circumstance which occurred to myself about two years since, whilst surveying the coast of Palawan (from which I have but a few days returned), which I consider a strong evidence of the moral influence the proceedings of the Rajah (Sir James Brooke) have obtained in that quarter, even beyond where he has been seen:—Landing on the eastern shore of Palawan, in a boat, with six men, in the execution of surveying duties, I was met by a corresponding number of Malays, armed, who, assuming a threatening attitude, warned me off. I told them we were English, and inquired what they were afraid of? This appeared to inspire something like confidence; when one of the party asked, "Did I know Tuan Brooke?" Replying in the affirmative, he exclaimed, "Bargoose! Tuan Brooke," or, "Very good Mr Brooke;" placing his arm on my shoulder at the same time, his confidence being fully confirmed.

It was my good fortune, a few months later, to meet a man on the same coast, named Sherriff Hassen, a native of Maludu, which was so notorious in 1845 as being a den of piracy. This man produced a paper, given him by the Rajah, certifying to his honest character, and recommending him to any Europeans with whom he might meet. The certificate was dated on board H.M.S. *Meander*, at Malludu, in 1848.

That His Excellency may long be spared as an instrument of Divine Providence

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from the numerous reefs, and the inutility of the lead as a warning to keep you clear of them, added to which, you cannot place reliance on seeing a coral patch, for the water is not so clear here as in coral seas generally.

On the afternoon of the 7th August, whilst beating down the coast, carrying an average depth of 13 fathoms, and a boat in shore surveying, we suddenly hove in stays, for a short cast of 5 fathoms. Before the vessel was round she struck upon a rock, the man in the chains being unable to get even then 4½ fathoms.

On a subsequent occasion the ship was anchored in a position well clear of the coast, in 19 fathoms, (a depth that had been carried a mile before coming to,) when her stern swung into 4 fathoms, two boats' lengths beyond which was 21 fathoms, and this without the slightest change in the colour of the water! This is mentioned in order to show that a survey of this coast cannot be undertaken without considerable risk, even under the most favourable circumstances; and the weather here, at times, is such as I have never before witnessed within the tropics; with a heavy sea generally rolling home upon the coast.

Continuing the survey to the southward, we anchored, on the 19th August, off a small river, called *Canee-pa-an*, (lat. 8° 39′,) about 12 miles from the south extremity of the island, navigable only for boats. There is a Malay settlement about six miles up the river, over which a Datoo presides. We had however only one opportunity of communicating with it, for the day after our arrival, it came on to blow exceedingly hard from the westward, with rain, the winds veering in the squall to N.W.

This weather lasted eight days, during which period we were riding heavily, with 100 fathoms of chain out, in a very critical position. The sea having got up, displayed to our view dangers, the extent and proximity of which we were not aware of before. Providentially the ship continued driving a little every day, which cleared us of a 3 fathom patch, now breaking heavily 3 cables from the bow. Reefs to seaward were breaking as far as the eye could reach, and the only clear portion we could discover, was that immediately N.E. and S.W. of the vessel.

On the 26th, the moon coinciding with perigee, the squalls were so violent as to cause serious apprehension for the safety of the ship in case of her chain parting. Putting to sea was out of the question, reefs bounded our horizon, and the nearest secure anchorage was Maltar-nat, distant 50 miles, to run for which required the greatest caution even in a clear day.

for the good work he has so successfully commenced in the Eastern Archipelago, whose children already join in singing songs of gratitude to their benefactor, is the humble but hearty prayer of

Your obedient Servant,

To Robert Wigram Crawford, Esq. C. PASCO,
Lieut. R.N.

We congratulate Sir James on the good feeling which prevailed on that occasion, among so large and influential a collection of English gentlemen, and the opportunity he thus had, and of which he availed himself, of throwing back the calumnies of his detractors.—ED.

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Happily the change of moon brought a temporary change in the weather, and as we had only three days' water, and no chance of our boats effecting a landing, owing to the heavy sea rolling home upon the reefs, we proceeded to *Dalawan Bay*, (Balabac Islands,) surveying as well as circumstances would admit the scattered reefs which lay in our passage thither.

As the monsoon had now fairly set in upon the south coast of Palawan, with strong breezes from the W. and W.S.W., and knowing that if I remained there my time would be unprofitably occupied riding heavily at the anchors, upon a dead lee shore, I determined on proceeding to Singapore to replenish provisions. Accordingly after remaining 48 hours to complete water, we sailed from Dalawan Bay on the morning of the 1st September, for Labuan, and arrived there on the 12th. Vessels should be exceedingly cautious when passing through Balabac straits, and particularly if they approach the above island, as an extreme reef projects fully four miles from the S.W. point of it; in this season the currents set strong to the E.N.E., and the *Royalist*, after having experienced great difficulty in getting through from the E., had a very narrow escape, during thick weather, of being forced on the reef above mentioned.

We scarcely had been an hour at anchor at Labuan, when the vessel was struck by lightning, the electric fluid, after scooping a piece out of the fore-top-gallant-mast, descended to the lower-deck, slightly injuring five seamen, three of whom remained senseless for a short time.

The *Royalist* is not fitted with lightning conductors.

Remaining at Labuan a week to rate the chronometers, and commit to paper some portion of the survey, (the latter operation greatly facilitated by the kindness of the Lieut.-Governor providing me with a drawing room,) I sailed for this place on the 20th, and arrived here on the 11th of October.

Although we have been entirely free from disease of a malignant type, I have taken from the assistant surgeon's daily report the number of sick, for ninety consecutive days, and from it I find the *mean* list amounts to 14·5 per day; at the close of the survey it was seldom under 20; and I may remark this is not occasioned by exposure, or the particular nature of the service upon which we are engaged; the cases chiefly consist of rheumatism and syphilis, many having their origin long before entering into this ship.

The Funk Islands, Newfoundland :—Seal-Hunting.

[The Funk Islands are a little group of rocks, just above water, about thirty miles from the nearest part of Newfoundland, bearing about N.N.E. from Cape Freels. The largest of them is not half a mile long, and there are, in all probability, many dangers about them which do not appear in the chart. The following is the account of a sealing party, who have first made the experiment of passing the winter of 1850-1 on it.]

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In the month of September of last year, Mr. Stephen March fitted out an expedition for the Funk Islands, for the purpose of prosecuting the Seal Fishery during the winter season. On the 5th October, the crew sailed from Old Perlican; but in consequence of the adverse state of the weather, were forced to put into Catalina, where they were detained eleven days, when they again started; but were compelled to make a harbour of Greenspond for four days, a heavy sea running outside and making navigation dangerous. They left Greenspond for the Funk Islands on the 21st, and on the next day at 2, P.M., arrived at their destination, and immediately commenced landing their winter stores,—the vessel all the while under canvass, not venturing to anchor. The winter crew, consisting of thirteen men, then landed on the N.E. side, and the vessel sailed for Hants Harbour. The exertions of the crew in landing their stores under very disadvantageous circumstances, induced fatigue, and they stretched themselves within the Penguin pounds, and, notwithstanding the novelty and perhaps danger of their position, were soon buried in profound slumber. Upon waking, the crew immediately set to work, and constructed a building, which they secured from the breaches of the sea by a thick wall of wood and earth; which was their only shelter: and frequently the sea beat so furiously against it, that their alarm was great least their wall should be destroyed; in which case, all hands must have perished. On the evening of the 10th November, a very strong gale sprung up from the E.N.E., creating a tremendous sea, which breasted over the island. The apprehensions of the poor fellows who were confined within their wall, was great; but it withstood the inundation: and upon the wind abating and the sea falling, they commenced their work of fishing and shooting; and with one line they caught at different times about six quintals of cod fish. About the latter part of November there was a high sea from the N.E., during which they observed a great number of shoals, which we counted and found to amount to twenty three, continuing nearly round the island, a small arc of 33° 45′ only (from W. b. N. to N.W.) being clear. Upon a close observation, the principal of these shoals, and the most dangerous, as being furthest from the Island, and therefore less liable to be apprehended, was seen to break about two miles from the shore, bearing S.W.; the rest showing an almost continual breaking, three miles in extent from the Island. A chart of those shoals is being prepared, and will soon be completed.

On the 6th January (Old Christmas) the soft ice (lolly) made its appearance, and the next, the old seals were seen going southward; coming within a quarter of a mile of the land; but in consequence of their being in the water, nothing could be made of them. This continued until the first week in February, when they struck northward again; but up to this time one only could be got, killed on the 29th January. The firmer ice drifted down on the 1st February, but there were no seals upon it. After the 9th, a few were taken, from two to five a day; the most that had been killed on any one day being eight; and thus only fifty were obtained up to the 20th March; when all disap-

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peared, and were not seen again until the 15th April, when they once more showed themselves upon the ice, going northward, and sixty-seven of their number were brought on shore, and next day ten more were added; after which they all disappeared, and were not seen again during the stay of the men on the island: the total number of seals taken during the winter thus amounted to only 127. The ill success which attended this adventure, is attributed to the prevalence of strong gales from N.W., which prevented the ice and its inhabitants from drifting to the eastward; and thus destroying the possibility of obtaining a good voyage. Had the wind remained as it was when they landed on the Island, N.E. or E.N.E., it is the opinion of the crew, that they would have been amply repaid for their toil and perils during this hazardous adventure. So confident are they of the possibility of at last succeeding, that they have no hesitation in again offering their services, on a similar expedition.

Birds were abundant on the Island, and furnished the men with fresh provisions, during their exile,—several barrels were salted as a stand-by in case of need—and the humanity of these brave men, must be recorded in the fact, that when a provision against want had been made, no more than a daily sufficiency was killed.

On Saturday, the 10th May, the vessel came to the Island and took the crew off: leaving such things behind as might be useful for another season.

Mr March has again ventured another expedition this season, and on Friday, the 17th inst, a landing was attempted, but the sea was so rough, that only two persons could succeed, who were left on the Island; and the vessel was compelled to leave for Catalina.

Mr M. states that the doubts entertained of the possibility of inhabiting the Funks throughout the year, have been dispelled; and suggests the propriety of a Lighthouse being placed on this isolated spot—the waystone of the northern harbours of Newfoundland and of the Labrador. He seems confident that the results to the sealing interest would amply repay the expense of a light, and the saving to human life is a preponderating consideration.

Review of the History and Progress of a System of Permanently Fixed Lightning Conductors for H.M. Ships—from the Year 1820, when first proposed, to the present Year 1852, when fully adopted into the Public Service.—*By Sir W. Snow Harris, F.R.S.*

(Continued from page 300.)

27. The results of the further trials of temporary conductors for the preservation of the Royal Navy from lightning, applied as rigging, were such as had been predicted by the Committee. In some cases

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they failed to afford the required security; in others they became damaged by the wear and tear of the rigging; and in others they were insecurely applied:—until, at length, in June, 1842, a succeeding Board of Admiralty, finding it inconvenient to be held responsible for a system of Lightning Conductors for H.M. Ships, designated by a Naval and Scientific Commission as a "dangerous and inadequate expedient," and "liable to lead to serious accidents," determined on complying with the advice of the Commissioners. Accordingly an order was issued in June, 1842, to carry out the new conductors generally in the Royal Navy; and thus the plan became fully adopted into the public service, with what success we have already seen (22).

It may not, however, be unimportant before we proceed more especially to the valuable scientific deductions which have since resulted from this judicious and decisive step, to further advert to the trials of the temporary conductors partially applied as rigging which had been insisted on, and to some circumstances connected with them, requisite to notice in a history of this kind.

28. It appears by a return to a precept submitted by the Earl of Minto to the House of Peers, date June, 20, 1849, that between the period of the Report of the Commissioners in July, 1839, up to June, 1842, thirty-four of ships of the Navy had been fitted with small ropes of wire, in various ways, with a view to parry discharges of lightning;—and it was the object of the noble lord who submitted the precept to the House to invalidate the Report and opinion of the Commissioners as to the efficiency of such Conductors, and show by what he thought conclusive evidence, that whilst temporary conductors of wire ropes were and are more economical than the permanently fixed plates then in general use, they were equally efficient and secure, and ought therefore to be preferred;—and in order to make the comparative cost more favourable to the wire ropes, the precept was confined to a return of the cost of fitting the permanent conductors in four ships of the Navy, and which were especially selected as involving the largest amount upon record. Such a partial and arbitrary selection could not be mistaken; the object was of course to bring the permanent conductors into such financial disrepute as to lead to their discontinuance in the public service. Here, however, as in previous instances, the facts were conclusive as to the superior efficiency and economy of the fixed system.

The question of the actual cost of fixing conductors in H.M. ships, as compared with the advantages and the saving resulting from such a system, was no doubt a very proper subject for inquiry; and if fairly and philosophically conducted, could not certainly be objected to. It was not, however, an impartial proceeding to call for returns of the cost of fitting the permanent conductors in certain ships nearly twenty years previously and under all the disadvantages of a new and unpractised experiment (17). That was surely a very unsatisfactory and partial course, and very ungenerous to the inventor, had the object been the *real* cost of the system to the country; why not have called upon the Admiralty for an especial return for the whole Navy up to that time,

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viz., June, 1849? and not for obsolete returns for *for four particular ships*, the cost of which had been, especially in one case, exaggerated beyond all reasonable bounds. Thus the returns for a 28 gun sloop, the *Tweed*, had been set down at £292, being greater than the returns for a line of battle ship fitted only a few years subsequently. The shipwright officers, as if conscious of the financial injustice of such returns, enter a minute in red ink in their report to this effect: "This ship was fitted under peculiar circumstances. A vessel of her class would not cost at this time one third the amount." Now as it must be allowed that there is a vast difference between £292 and the one third part of £292, that is, about £97, it is so far demonstrable that the return for this ship, the *Tweed*, if not thus explained, and that by a mere chance, could only tend to mislead the public mind upon the financial question at issue.

Similar minutes accompanied the shipwright officers' returns in 1839 for two other ships, viz., *Caledonia*, 120, and *Revenge*, 76, fitted in 1830; the cost of which was set down at £423 and £416*; and in which they say, "This is the cost as nearly as is ascertained; but if fitted up at the present time, the cost would be considerably less," &c.

29. With respect to the cost of the *Tweed*, sloop, it has already been remarked (26) that the new conductors were applied in that vessel immediately under the Dock Yard administration of the First Naval Lord, a near relative of the noble Lord then at the head of the Admiralty, and who originated the precept now under consideration. Moreover, the professed object in fitting this ship, was a comparison of the cost of the permanent conductors and the temporary conductors of wire rope, then (1840) a question of consideration with the Board of Admiralty. In carrying out this, however, the inventor of the permanent conductors was refused all superintendence or interference with the work, which was left altogether at the mercy of a powerful party, avowedly opposed to the whole system. The consequence was, that the expense of fitting the *Tweed*, from the little care taken in economising the work, was three times as great as it should have been; and which is clearly proved by the minute of the shipwrights just adverted to (28).

30. It is curious to remark in this question of the cost of the plan to the country, how extravagantly those opposed to it were led to proceed. Taking the aggregate sums £423 and £416 for First and Second Rates,—and the heavy sums of £292 and £236, which were placed against a 28 gun sloop, and the *Beagle* 10 gun brig,—as fair illustrations for the whole Navy,—they added together all the first rates at £423 each, all the second rates at £416 each, and so on, and in this way arrived at a frightful amount. So that representations were made to the Board of Admiralty to the effect that the use of the new conductors in the Royal Navy entailed upon the country an expenditure of no less than £30,000 annually. Whereas that whilst many thousands were being saved every year to the Treasury, the cost

* Parliamentary Reports, Feb. 1840, p. 83.

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of the conductors was really so small as to be scarcely worth consideration: the few following facts and considerations will clearly show this.

31. First it is to be observed, that the material of which the conductors consist, will last for an almost indefinate time, and may be transferred from ship to ship, or be converted into new copper sheet at the small cost of four-fifths of a penny per pound*: and since it could be shown that the quantity of copper sheet in the Government service would be just as great whether the fixed lightning conductors were general in the Navy, and constituted a part of it, or not,—the actual cost of these conductors to the Crown would—to make the most of it—be virtually reduced to the labour of the application, and the cost of reconversion of the material. The following official Table, taken from the Parliamentary Report†, exhibits the actual cost to the Crown of the fixed system of lightning conductors for H.M. ships, after making deduction for reconvertible material only as old copper, and taking a liberal credit even for interest of money, labour of fitting, &c., &c.

Rates	1st.	2nd	3rd	4th	5th	6th	Sloops	Brigs
Cost to the Crown.	£125	£119	£111	£104	£93	£66	£51	£44

Now if it be thus evident that the actual cost to the country for a first rate is only £125, or for a sloop, such as the *Tweed*, not more than £51, then how great a fallacy and injustice is apparent in leading the public to believe that the cost is £423 and £292 for such ships, and which expenditure is liable to occur yearly. This then, as a question of finance, becomes an important and interesting point in a history of this kind, and is hence worth a little further illustration.

32. We may here observe, that a ship once fitted with the permanent conductors as an integral part of the vessel, (10,) does not necessarily involve any further cost so long as she lasts, which should be from 16 to 20 years; the masts perhaps may require to be replaced within that time; still the same copper plates are available, (31,) so that the whole Navy being completed, there is no longer any new outlay, at least nothing of any moment: the actual cost of the permanent conductors is really little more than the expense of workmanship, and the loss upon the reconversion of material (31). To which we should add perhaps the labour of cutting, drilling, and uniting the plates; the whole expense of workmanship, together with the nails, should not for a first rate greatly exceed from £70 to £80. With respect to the material itself, as we have already observed, (31,) the quantity of copper in the public service would not be materially affected by the application; the only difference would be, that a small portion of it would be doing good service in preserving our ships from lightning, instead of remaining unemployed in the stores of the Dock-yard. If we take the cost to the Crown in round numbers as £75 for placing

* Returns to the House of Commons, 6th April, 1835, printed March 19.

† Shipwreck by Lightning, page 13.

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a first rate, worth £150,000 all included, in security from lightning, and that too for 16 or 20 years, that is really as much as should be allowed. Let, however, the cost be taken at £100, still it would not exceed the fifteen hundredth part of the value of the ship. But when we reflect on the vast and important services for which such a ship is destined, that she is a material element of the power of the greatest maritime nation on the page of history, that she is charged with the lives of 800 seamen, will it be said that an expenditure not exceeding the fifteen hundredth part of the value of so noble a structure, is too great a sum for insuring its security against one of the most terrible elements of nature. This question of the cost of the plan, therefore, so unremittingly pursued in the way of objection to its use in the Navy, was evidently based on a narrow, short-sighted, economy, quite unworthy of any one professing to exercise the functions of a British statesman.

33. If we only for a moment turn to the destruction by lightning found to have occurred in the Royal Navy in past times, and to the saving at present affected, this conclusion is irresistable. In April, 1813, the *Repulse*, of 74 guns, actually engaged in the pursuit of an enemy's squadron in the Mediterranean, was twice struck by lightning in the Bay of Rosas ; no less than ten seamen were killed dead on the spot, ten more were so severy injured that the greater part eventually perished. The ship at once lost twenty of her crew : in addition to this, the mainmast was ruined—no sail could be carried on it, the top-mast and top-gallant-mast were shivered in pieces, and the vessel effectually placed " hors de combat." She suffered more than would have probably ensued as the result of a general action : thus did Sir S. Hood lose the services of one of his most efficient ships, to say nothing of the cost of the subsequent refit at Minorca. When the question of economy, therefore, is considered, it is essential to recollect such cases as this, so very common in the records of the Navy.

34. Now with respect to the actual state of the Navy as regards its deliverance from such terrible casualties, it is to be observed, that only within the short space of sixteen months, viz, between March, 1846, and July, 1847, at least ten ships, including four large frigates, were completely saved out of the destructive thunderstorms of Tropical Climates; these ships were—*America*, 50, *Constance*, 50, *Fisguard*, 42, *Fox*, 42, *Conway*, 26, *Rose*, 18, *Racer*, 18, *Dido*, 18, *Albatross*, 16, *Childers*, 12; and by which a sum of certainly not less than £10,000 must have been saved to the Treasury. Let any one acquainted with such details, say, what would have been the loss and inconvenience to the Country, had such a ship as the *Constance*, a frigate of 2,000 tons, lost one or perhaps two masts, on the coast of Mexico, or the *Fisguard* of 42 guns, been similarly dealt with on the Oregon*. In January, 1850, the *Ganges* of 80 guns, was preserved from a furious stroke of lightning, at Athens. Then we have had numerous recent instances of the *Ranger*, 18, *Rattler*, steam-ship, and others on the coast of

* See Returns to the House of Peers, 14th June, 1849, No. 154.

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Africa; *Calliope*, 26, in New South Wales; *Southampton*, 50, at Rio; &c., &c. In short, as before observed, (22,) the only instances in which damage has arisen of late years, to ships of H.M. Navy from lightning, are a few cases in which from some peculiar circumstances, the fixed conductors had not been placed. We will however confine ourselves to the first few cases, and stop only to examine the saving effected, as compared with the outlay for the conductors.

On a comparison with known cases of damage by lightning in similar ships, a sum of not less than £3,000 must have been saved upon such a ship as the *Ganges*, and certainly not less than £10,000 upon the ten vessels just named.

Here then is at least £13,000 saved to the Treasury upon a few cases only: now, referring to the Table already quoted, (30,) we have the following cost of the conductors by which this saving has been effected. One ship of the line, second rate, £119; two large frigates, or third rates, £222; two frigates, fourth rates, £208; five sloops, £255; one brig, £44;—total, £848. So that £850 would cover the outlay for conductors upon these ships for 16 or 20 years. In return, the country has saved at least £13,000; and what is of still greater importance, the services of the ships and the sailors' lives. This result, although perfectly satisfactory, is not the only consideration: we may imagine, that within the period of a ship's existence, she may suffer many times from lightning. The *Racer*, *Conway*, and *Albatross*, were preserved on more than one occasion; the *Cumberland*, 74, in former years, viz., 1810 to 1812, was disabled by lightning no less than three times, that is, within two years, and once set on fire; within this period she had no less than three refits and two new mainmasts. We are not now speaking from any casual evidence, but on the faith of official records. Apply this to the whole Navy, and what becomes of the question of the exception taken to the permanent system of conductors employed in H.M. ships on the ground of economy.

35. On comparing the cost with that of the temporary conductors of wire ropes, we find by the returns to the precept of 18th June, 1849*, that the cost and outlay for wire conductors amounted after all to something considerable; being, for a first rate, £80, without sea store: now little allowance can be made here for reconvertible material; for it is to be observed, that wire rope, like any other kind of rope, is perishable, likely to be lost overboard, or, what is termed in the Navy, expended, in various ways; then its cost price was at least four times the cost of common copper sheet; and there would be a loss of at least three fourths of its original cost upon every pound sent to the furnaces at Portsmouth. Taking all this into account, it is evident that the economy was, after all, in favour of the permanent system; besides that the latter has been proved secure, whilst the temporary system is insecure, as a few well recorded facts fully show.

36. That small ropes of wire may carry off lightning, and occasionally protect a ship from damage, few will deny. Dr. Franklin

* No. 80, Printed 15th March, 1850.

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found that even bell-wires have transmitted lightning with safety. This, however, was not the point at issue. The great question under consideration was, the adoption of such a system of permanently fixed electrical conductors in ships, as would be independent of the crew, and effectually secure the vessel from lightning at all times and under all circumstances (10). It was also to be further considered, that since a conductor on one mast—suppose the mainmost—does not necessarily defend the other masts, (7,) it is requisite to apply a conductor to each mast; and thus the crew have to provide for the application of three wire conductors in the rigging, and have consequently three temporary conductors to look after instead of one, formerly considered sufficient.

37. Now of the several vessels named in the returns to the precept just named, printed 15th March, 1850, and as having previously to the 6th of June, 1842, been fitted with lightning conductors of wire rope, we find at least two cases in which serious damage arose, incidental to the conditions already laid down (14). Thus in the *Bittern*, sloop, struck by lightning on the coast of Africa in January, 1844, only a portion of the charge was carried off: the consequence was, that the royal-mast was shivered in pieces; and, by the surgeon's return and ship's report, no less than eight men were struck down on the deck and sent to the hospital.

In the *Hazard*, sloop, struck by the electrical discharge on two occasions at Sumatra, in May, 1846, the wire conductor was partially destroyed, the copper to which it was attached torn off the ship's side, the main-top-gallant-mast and main-topmast shivered in pieces, and much other damage done; thus furnishing a very convincing proof of the soundness of the views entertained by the Commissioners, viz., that such a form of conductor can only be regarded as a "temporary and inadequate expedient," and "liable to lead to serious accidents." Similar results had ensued in other directions: *La Junon*, a French frigate, having a similar conductor, was struck by lightning, which divided upon the body of the vessel, and damage ensued*. At "L'Hotel des Invalides," at Paris, the electrical discharge shattered a wire rope conductor in pieces, and severely damaged the building. Similar results ensued in a French brig, *Bougainville*, struck by lightning on the coast of Africa, whilst in company with H.M. brig, *Ferret*, which, furnished with the fixed system of lightning conductor, did not meet with any damage. In addition to these cases, repeated instances occurred in which these temporary conductors were ill applied, out of place, or damaged by the strain of the spars and chafing of the rigging: this occurred in H.M. ships *Impregnable* and *Belleisle;* the wire ropes became chafed through, and were sent on shore to the Dockyard at Devonport as defective. The log of the *Fair Rosamond*, a brigantine, has the following entries:—"22nd March, 1842, observed lightning conductor carried away; spliced the conductor." "23rd March, 1844, found lightning conductor gone." These results, therefore, all went to confirm the views of this question entertained by the

* Arago, "Notices sur la Tonnerre."

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Commission. In the returns, however, to the Precept submitted to the House of Peers, 18th June, 1849, and which called for a Report on "the Efficiency of Wire Rope Conductors," by the commander of the *Electra*, it appears that "on two occasions the wire ropes were considered as having conducted away "heavy discharges of the electric fluid;" and the Commander gives it as his opinion, that this kind of conductor is "safe, easy to manage, and not the least likely to get out of order."

38. Although no one could for a moment question the Report as a conscientious statement, still, upon a comparison with numerous other Reports, (37,) it is quite evident that the opinion of the Commander of the *Electra* is by no means consistent with experience; and whilst the Report itself has no new bearing on the great points at issue, inasmuch as (36) it was never contended that wires could not occasionally transmit large quantities of "electric fluid;" (36;) is by no means beyond the limit of dispassionate criticism, more especially as coming from an adverse party, with a view to invalidate the opinions of the Naval and Scientific Commission appointed to investigate the subject in 1839; and, contrary to its recommendation, resort to the employment of small ropes of wire as a security for H.M. ships against lightning.

39. It is always difficult in submitting the statements of honourable men to a critical analysis to avoid misapprehension; nevertheless, it is still most important to the history and progress of any invention in practical science to discuss freely every circumstance bearing on it: without, therefore, at all doubting the accuracy of the statements made by the Commander of the *Electra*, or the perfect honesty of any opinion he may have been led to advance, it is still permissible to carefully weigh such statements and opinions in connection with attendant circumstances, so as to determine their precise value as philosophical evidence.

40. In pursuing this necessary step—it is to be first observed that the Report given by the Commander of the *Electra*, was especially called for by Admiral Sir Charles Adam, whilst Commander in Chief in the West Indies*, and as appears by the dates, full two years after the events to which the Report alludes are said to have occurred, the date of the Commander's Report is so late as the 30th December, 1844, whereas the phœnomena to which it refers belong to October, 1842; now whatever may have been the character of these phœnomena as bearing on the question of the Wire Conductors, the Commander did not evidently consider them, at the time, as being worth any very especial attention, certainly not worth an especial report, otherwise such report would have immediately appeared; it would have been a voluntary report, and the facts would have been recorded in the Ship's Journal and other papers, which does not appear to have been the

* The commencement of the Commander's letter runs thus:—

H.M. sloop "Electra," Bermuda, 30th December, 1844.

Sir,—In obedience to your directions to report upon the efficacy of the Lightning Conductors fitted on board H.M. sloop *Electra*, I have the honour to acquaint you, &c. First, on the evening of the 12th October, 1842, &c., &c., &c.

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case. It may hence be fairy inferred that no such Report would have ever existed but for the especial "directions" of the Commander-in-Chief in support, at a particular time, of his avowed opinions on the question of wire rope lightning conductors, and with a view to forward their more general employment in the Royal Navy. But let the most scrupulous person in existence be called on by an influential authority under which he is serving, perhaps a particular friend, to report upon certain phenomena which he had witnessed two years previously, knowing at the same time the kind of report which was expected from him; how unconsciously might a forcible expression of opinion find its way into such a Report, and what a strong colouring might very unwarily be given to the picture, looking through the vista of the remembrance of two years. As already observed, we are here dealing with this Report upon the ground of its value as evidence, in opposition to other evidence, and not with the question of authenticity as a conscientious statement: that the wire ropes of the *Electra* did carry off, as reported, "heavy discharges of the electric fluid," is doubtless a fact; but it is not so apparent that a dense shock of lightning, such as that which struck the Hazard, (37,) really fell on the ship. In heavy thunder storms the wire line of an electrical kite, and the ordinary wire electrical apparatus of Observatories, display most astounding effects. Mons. De Romas, in France, obtained from the clouds, by means of the wire of an electrical kite, phenomena quite equal to those described by the Commander of the *Electra*:—"Sheets of fire from nine to ten feet long, and an inch wide, as also detonating balls of fire, struck upon the ground, with the report of a pistol*." The question therefore arises, did these wire conductors actually meet such a destructive explosion of lightning as would have shivered her spars, and which, as in the case of the *Hazard*, actually tore the wire rope out of the rigging, and disabled the main-mast†: certainly for this there is no evidence.

41. We have to notice here, as being intimately associated with the production of this Report, a communication from Admiral Sir Charles Adam to the Board of Admiralty, relative to a most fearful shock of lightning, which fell on the mast of H.M. Sloop *Scylla*, then one of the fleet on the West India station, under his orders; and about which there was no mistake; and which, notwithstanding that the vessel was *completely preserved* from the full charge of a dense West India thunder cloud, created so much alarm in the Admiral's mind, relative to the fitted conductors, as to lead to a communication which went far in determining the Board of Admiralty, at the time, to remove them from H.M. Ships; this was a most remarkable circumstance in the history of this invention, as tending to show how difficult it is to overcome, under any circumstances, however conclusive, a long standing and inveterate prejudice.

It appears by official documents, that on the 6th of August, 1843,

* Priestley's History of Electricity.

† Returns for 15th March, 1850, No. 80, page 3.

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at 7h. 50m. A.M., the *Scylla* sloop was struck by a terrific burst of lightning, at sea. Having just shortened sail to a squall, a dense black cloud overspread the vessel, and darkened the surrounding sky, and in the midst of tremendous rain, poured forth its terrific lightnings on the main-mast, with an explosive concussion, which "shook the ship to her keelson;" the plates of copper immediately under the truck in the royal-mast, were shook in their places and loosened, and some of the nails and butts started, by the force of the shock, but the vessel itself remained unhurt, the whole discharge was effectually carried off without any damage to the spars, and was, according to the log, again under sail, within half an hour after the explosion, as secure as if nothing of the kind had occurred. Such was the excited state of the air, under the great thunder cloud, that the chain cables, coppers, and other metals about the ship, exhibited strong electrical signs, and small sparks were seen on them. On inquiry, it was proved that the loosened plates were refixed by the carpenter of the ship, in a very short time, about a quarter of an hour; and that the royal-mast had been fitted at Port Royal, where the most improved method of securing the conductors was not practised.

Here then was a perfect case of preservation from lightning, certainly of as great destructive force as the explosion which destroyed the wire rope, and shivered in pieces the spars, of H.M. Sloop *Hazard*, already adverted to (31), and about which there could be no mistake. The Captain of the *Scylla* enclosed a copy of the log to his Commander-in-Chief on the station, Admiral Sir C. Adam, with the following remark:—"I cannot omit this opportunity of recording my high opinion of the utilility of the lightning conductors on Harris's plan, with which the *Scylla* is fitted; if we had not had them the main-mast must have been shivered; or, perhaps, more serious disaster would have befallen us."

42. One would have been led to imagine that all this was conclusive enough, not a rope yarn was hurt, and the ship's services efficiently preserved. The Admiral, however, took a different view of the case, and made a report to the Admiralty in October, 1843, in which he passes by the *safety* of the ship, altogether, as unworthy of notice, but calls "their Lordships' attention to the circumstance of the nails and plates, fitted on Harris's plan, having been removed by the electric fluid, all of which, says he, did not appear to have been carried off by the conductors." Then the Surveyor of the Navy, (Sir W. Symonds,) who, together with the Admiral, had been all along avowedly opposed to the employment of such conductors in the Navy, taking alarm at this, and without at all looking at the triumphant success of the conductors, in actually saving the ship from a stroke of lightning, which, in other similar cases, had shivered the spars into laths; without at all seeing that the mere starting of the plates aloft, previously ill fixed, was no evidence whatever that they had not "carried off" "all the electric fluid," immediately proceeded to issue a circular to all the dockyards, calling for an immediate return of all ships fitted with the new conductors, with a view to their being removed from the Royal

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Navy; that was the sort of acknowledgement of the immense good which had been effected for H.M. Service, in saving one of the Queen's sloops from the destructive violence and full force of a West India thunder cloud, which poured forth all its terrible lightning immediately on the ship. We have already alluded to the damage and loss of life in the case of the *Sappho*, a similar sloop, struck by lightning under somewhat similar circumstances, February, 1820; in that case not only were the spars shivered in pieces, but no less than twenty of the crew were either killed or hurt, and four more lost overboard. The Board of Admiralty, however, before acting upon the views of the Surveyor of the Navy, thought fit to call upon the Captain of the *Scylla* for further information, and the consequence was so clear and complete an elucidation of the misapprehension which had arisen relative to the phenomena of the case, that the conductors received increased confidence, and were speedily carried out generally in H.M. ships. It was not surprising therefore under such inveterate prejudices, and which evidently did not permit the great fact of the preservation of the *Scylla* sloop to receive the slightest acknowledgement, to find on the other hand such a report on the "efficiency of wire ropes" as that already adverted to, immediately called for by the Admiral, from the Commander of the *Electra*, in favour of the employment of such wires, as an effectual security for H.M. ships from lightning; and the claims of which as evidence upon the question of lightning conductors for the Navy we have fully considered.

Such are some of the intricate and difficult circumstances with which the method of a permanently fixed system of metallic conductors carried throughout the vessel, and by means of which the Navy of of Great Britain has become placed in security from the destructive agency of lightning, has had to contend. Such facts are valuable historical records; they furnish, as it were, a chart for the guidance and information of those who may be led to traverse the anxious and vexatious ocean of mechanical and practical science; and, whilst proving that nothing in this life can be achieved without great patience, forbearance, and perseverance, clearly point out to the Government of the country, the great advantage which would arise to some of its best interests, by the establishment of a competent tribunal, which, free from all prejudice, could dispassionately report to the proper executive authorities, the actual merits and value of any invention in practical science.

(To be Continued.)

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Notes on a Voyage to China in Her Majesty's late Screw Steamer Reynard.—*P. Cracroft, Commander.*

(Continued from p. 324)

We found the light on Cape Frio very indifferent,* the revolving one of Raza very good; there is a harbour light on Santa Cruz also. The trade of Rio Janeiro is increasing rapidly; 48 per cent. of it is in the hands of the British Merchants; a great proportion of which, I was assured by our Chargé d' Affaires, Mr. Hudson, would have passed to foreigners, had our old Navigation Laws not been repealed! It was necessary for me to go up the harbour to get at a leak, and I had to land the powder at Fort Vilganhon first. The Brazilians were very civil, and supplied me with every requisite, including two mooring lumps, hempen cables, purchases, &c.; and I took in a line of battle ship's moorings to heave the ship's bows down to. At Ponta d' Arca is an extensive iron foundry and ship building establishment, under English direction; a Mr. Dobson has charge of it, and I obtained a casting done there for the turning gearing. Water is supplied by contract, by a Mr. Bowden, in tanks, which hold about 20 tons; he has also the beef contract. The coal contractor is a Mr. Friere; and we were completed very expeditiously by Niggers, carrying baskets on board from a wharf which the ship lays alongside of; the coal, however, was Newcastle, and the consumption enormous,—more than double the estimated quantity the engines ought to require. The quantity of flame and smoke that issued from the funnel was very great: return tubes would have prevented all this waste, as well as the destruction of the boilers, owing to their scaling so much in the vicinity of the uptake, for this must always be *red hot*, and the steam in contact with it *superheated* in consequence.

Abstract of the Run from "Plymouth Sound" to "Rio." The shortest distance being 4,930 *miles.*

From Plymouth to Madeira	S. 27°	W.	1,184	miles
Madeira to St Nicholas	S. 23	W.	1,038	
St Nicholas to Portendic.....	N. 63	E.	490	
Portendic to Cape Verd	S. 11	W.	230	
Cape Verd to Bijouga Shoal	S. 10	E.	195	
Bijouga Shoal to Sierra Leone	S. 48	E.	279	
Sierra Leone to Rio Janeiro	S. 43	W.	2,580	
Total Distance			5,996	
Distance run under sail			5,318	miles
steam			839	
Actual Distance run			6,157	

* This is an observation to which we have alluded in this Journal long ago. We hope it will now reach the authorities at Rio Janeiro, and that they will see the propriety of remedying the evil.—Ed. N. M.

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No. of hours under sail		937·75
	steam	195·75
Maximum speed under sail		11·2 knots
	steam	6·4
Average speed under sail		5·70
	steam	5·25
Expenditure of Coal, in tons		49·25
Average temperature of Stoke-hole .. 128°	Engine Room 100	Deck Thermometer from 80° to 83°.

At 6h., A.M., on Saturday, August 11—we towed H.M.S. *Cleopatra*, out of the magnificent harbour of Rio Janeiro, at a maximum speed of four knots, by signal; which was considerably reduced outside the bar, owing to the heavy swell. At 10h. cast her off; and at noon, having attained a pretty good offing, made all sail to a breeze from E.N.E., and lifted the propeller. At sunset, parted company from H.M.S. *Cleopatra*, as we steered for the Cape.

The weather for the first few days was very threatening, without actually blowing very hard; but there was a heavy sea running, which prevented our carrying much sail; notwithstanding, the ship's performance was not so bad. The top-gallant-yards were sent down, and the masts housed, for the only occasion it was necessary during the passage. On the 30th—the effects of the westerly current round the Cape began to be felt, and it was necessary to get the steam up to ensure our arrival on the 1st.

At 7h., P.M., on the 31st—the wind fell very light, and we were scarcely stemming the current;—which we afterwards found was running full three knots;—so the steam was got up; and, in spite of a heavy swell, the screw was shipped without the least difficulty. On the 1st, at 9, A.M., we made the Table Mountain; at 2 30, P.M., passed inside the "Bellows" and "Anvil," and rounded the Cape of Good Hope within half a mile; steamed up to Simons Bay with the fore and aft sails against a strong north-wester; at 5h., rounded Noah's Ark, and saluted the flag of Rear-Admiral Reynolds; and at 5 30, came to an anchor in 7 fathoms, and moored with 36 fathoms each way, with the following bearings:—Light-ship on the Roman Rock, E.b.S., Admiral's house N.W.b.W., off shore, two cables' length. Found here H.M.S. *Southampton*, (flag,) *Castor*, with broad pendant of Captain Wyvill, *Geyser*, *Dee*, and *Seringapatam*, coal depôt; which no ship has been alongside of for thirteen months—I should like to know of what use she is. The following is the

Abstract of the Run between Rio and Simons Bay.

Distance, shortest		3,330 miles
run under sail		3,236
	steam	132
	Actual Distance run	3,398
No. of hours under sail	488	21 days 12 hours
steam	28	

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Maximum speed under sail	11·6 knots	
steam	10	
Average speed under sail	6·070	
steam	4·7	includes towing
Consumption of fuel	14 tons.	H.M.S. Cleopatra.

As the *Reynard* is the first screw steam vessel that has ever made the passage to the Cape of Good Hope, I shall give the abstract of the whole run; it may serve to assist in forming an estimate of the probable performance of the line of screw vessels which it is in contemplation to run as packets between England and New South Wales viâ this colony.

The shortest distance between Plymouth and Simons Bay, C. G. H., viâ Madeira, St. Nicholas, (C. Verd,) Portendic, Sierra Leone, and Rio de Janeiro, is	9,380 miles
The actual distance run by H.M.S. Reynard	9,525
Of which was run under sail	8,554
steam and sail	971
No. of days under sail	59·9 hours
steam	7·19
Maximum speed under sail (logged)	11·6 knots
by the log	12·0
steam and sail	10·0
Average speed under sail	6·003
steam	5·191
Total consumption of fuel, including that expended towing H.M.S. Cleopatra out of Rio	63 tons.

N.B. The Reynard stows 70 tons of coal *in her bunkers*.

At 4 30, A.M., on Wednesday, September 5—we departed, under steam, from Simons Bay, wind still strong from S.E. However, with the fore and aft sails we were abreast of Cape Hanglip by 11, A.M., where the wind became baffling, but finally drew to S.W., so we lifted the screw. This wind only lasted 24 hours, when we experienced a calm; and as we were still on the Bank, in 50 to 60 fathoms, the ship's company amused themselves all the afternoon of the 6th in fishing—being our mend-clothes-day. We caught chiefly a sort of bastard silver fish, or red snapper, weighing from 6lbs. to 20lbs., with a few Cape salmon. Baiting with a bit of fresh meat, they took the hook very greedily. We were unable to get the draught of water before leaving Simons Bay, owing to the swell; I believe, however, it was the same as when we left Rio,—the same weights being on board as near as possible, viz.

	ft.	in.
Aft	12	3
Forward	10	11
By stern	1	4

On the 12th the wind drew round with the sun from S.S.W. to N.E.; and on the evening of the 14th, continued drawing round and settled in the S.S.W. A sail observed on the evening of the 13th; kept company all the 14th and 15th, and proved to be a Dutch bark

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of probably 750 or 800 tons, apparently a very fine vessel, and carried a very heavy press of sail. She must have sailed well, however, to have kept up with us on the 16th, when the distance made good at noon was 271 miles. We carried a heavy press of sail the whole of that day and the next, single-reefed topsails, reefed courses, fore try-sail, and fore top-mast stay-sail. There was a heavy sea a little abaft the beam, but the speed we were going at prevented its breaking on board; the ship steered wonderfully easy, though the relieving tackles were hooked as a measure of precaution. On the morning of the 21st, the wind drew round to N.b.W., freshened gradually to a heavy gale; sail was shortened to close reefed fore-topsail, reefed foresail, and with one reef out of the main-topsail, and the trysails set, she went along merrily. Got the dingy in before dark, as the weather looked still threatening, and the sea was running mountains high.

At 10h. P.M. the Barometer was	29·80
Midnight	29·75
2 A.M.	29·68

At 3h. it began to rise, and at 3h. 15m. the ship was taken by the lee with a heavy squall from the S.W., the trysails were hauled up in time, but blew adrift, and the scene for about five minutes defies all description. The ship was going 10·5 when the squall struck her, and this great speed probably prevented her getting stern way, which would have been most serious; the only casualty in consequence, was the loss of the fore-topmast staysail, which was blown to shreds.

On the 28th, we experienced the first of the S.E. trade, and the set that usually accompanies it, the next day. On the afternoon of the 1st of October, hove to, and boarded the British barque *Calden*, forty-five days from Manila, bound to Sydney. The trade wind was unusually far to the eastward, drawing to E.N.E., so that instead of making Christmas Island, we were at one time in danger of getting to leeward of the Keeling, or Cocos Islands. As we approached the land the swell increased considerably, and kept breaking on board, flooding the deck, which we have not been accustomed to lately. Before daylight on Sunday, the 7th October, land was made, which proved to be Princes Island. The outline of Java Head was scarcely visible, owing to a mist which would have done credit to the English Channel in the month of November. We were unable to weather the Carpenters Rocks, so bore up, and, running past a frightful reef which extends nearly two miles to seaward, entered the Straits of Sunda to leeward of Princes Island. The contrast in scenery was great. The water was smooth; and the beautiful foliage, enveloping the land down to the very water's edge, only wanted the aid of the sun to render the picture most enchanting. By noon, thanks to our breeze, which continued, we were off Anjeer Roads; a most animated correspondence, as we approached them, having commenced between us and the natives, who had come alongside with every variety of tropical fruit, and fowls, eggs, monkeys, and parrots: but contenting ourselves with replenishing our stock of edibles, for which every description of

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coin passed current in exchange, we made sail, and narrowly missed a boat which brought me a letter from Captain Keppel, of the *Meander*, desiring me to call at Batavia on my way, if possible. These natives of Anjeer, as the first inhabitants of India we have seen, are deserving a passing remark. Below the average stature of Europeans, their well shaped limbs, on which the muscles are fully developed, betoken strength, and I can readily imagine their powers of endurance of fatigue, and capability of withstanding the tremendous heat of the sun, which we found most oppressive, though the thermometer was only 84°. Their swarthy countenances beamed with intelligence, and we soon found they were capital hands at a bargain. Fowls (the little Malay) one dollar a dozen, eggs (*mixed*, not being particular) one dollar a hundred, pine-apples a penny apiece, &c. &c.

Anjeer is a small place. A magnificent tree, over which the Dutch flag waved, is the most conspicuous object about it. A forest of cocoa-nut trees extends to the water's edge on either hand; while the back ground presents a picture of the most luxuriant tropical scenery. We sailed along this beautiful coast, (studding sails set on both sides,) passed Thwart-the-way, Button, and Cap; but here our S.E. trade failed us, and the land wind came off with a sharp gust, though without its attendant threatening lightning and rain. This breeze soon died away also, and we were fain to seek the aid of magic fumes, and spells, and boiling cauldrons. In brief, before 11h. P.M. the steam was up, and we had shaped a course for Batavia, through a most intricate channel. After sighting, at midnight, Pulo Baby, which I believe a vessel may almost run her jibboom over, we lay by for daylight, off Maneater Island, where two Dutch ships also waited at an anchor. Finally, after being exceedingly puzzled by the very indifferent chart of the coast supplied us, which repeatedly gave 11 fathoms where we only found 5, we threaded our way safely, and at 10½h. anchored in the Inner Roads off Batavia, in 7 fathoms.

Here was H.M.S. *Meander*, about to sail for Port Essington to break up the establishment there; thence to Sydney, the South Seas, and California; also a Dutch squadron, with a Vice-Admiral's flag, which I saluted, as well as the national flag. The usual anchorage for the Dutch men of war, is off Onroost Island, where their dock-yard establishment is situated; but at the present season it is so unhealthy that vessels are obliged to forsake it, and even the artificers (natives) have had to leave it this year, so fatal has been the epidemic. The number of sick in the Naval Hospital, laid up with this Batavia fever, reported to the Commander-in-Chief, (the Duke of Saxe Weimar,) amounted on the 9th, to 205 men and 18 officers; and it was much feared that most of these cases would prove fatal.

The unhealthiness of Batavia is proverbial; and no wonder, the town (properly so called) is intersected with filthy ditches, reeking with the effluvia of decomposed animal and vegetable substances, the only outlet for all of which is a canal extending upwards of a mile and a half from the landing place, into the sea, its banks bordered on either hand for a considerable portion of that distance with marshy

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land, the poisonous exhalations of which, mingling with the other, form a concentrated essence, which, inhaled at night, is generally fatal. No European therefore, as he values his life, *sleeps* in the town; all the merchants leave their counting-houses at 4 o'clock to the care of their native servants, and retire to their residences situated from two to eight miles distant from the old town, (for even to the latter distance this straggling city extends,) returning in the morning, when the sun has dissipated the noxious vapours of the night.

At Batavia is an Observatory, and we obtained the rates of our chronometers by a time-ball there, the notice of it having been sent off to us.

"The time-ball at Batavia, was established by a resolution of the Governor of Netherlands India, June 5th, 1839. The longitude adopted (east side of the boat-house) was 106° 52′ E. The ball is hoisted half-mast, 5 minutes before 12h., (mean time Batavia,) close up, 2 minutes before 12h., and falls at mean noon.

"Six o'clock Greenwich mean time, is indicated in the same way. The ball is hoisted again:—half-mast, at 1h. 2m. 28s.; close up, at 1h. 5m. 28s.; and falls, at 1h. 7m. 28s., mean time Batavia, or 6 o'clock mean time at Greenwich."

We could have no fresh beef here for the ship's company, the price of every thing seemed so exorbitant; but an American ship in the roads, supplied us bountifully with ice. The Americans trade largely here, but not equal to ourselves, according to the following return, which is extracted from "Temminck*," a paper in No. IV of the *Journal of the Indian Archipelago.*

Imports into Java and Madura in 1843.

Under the Netherlands Flag	fl 15,886,067
English	3,989,930
French	511,477
American	364,164

Exports of Java and Madura in 1843.

Under the Netherlands Flag	fl 47,422,822
English	4,699,969
French	1,463,083
American	1,462,548

The following is a complete abstract of the voyage of H.M.S. *Reynard* from England to the East Indies, having sailed from Plymouth 3 P.M. June 5th, and arrived in Anjeer Roads at noon, Oct. 7th.

(1.)

To Simons Bay, C. G. H., calling at Madeira, St. Nicholas, (Cape Verds), Portendic, Sierra Leone, and Rio Janeiro.

Total distance run	9,525 miles
Distance under sail only	8,554
steam and sail	971

* Temminck's General View of the Dutch Possessions in the Indian Archipelago.

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No. of days under sail	59·9 hours
steam	7·19
Maximum speed under sail only	12 knots
steam and sail	10
Average speed under sail	6·003
steam	5·191
Total consumption of fuel, including that expended towing H.M.S. Tweed and Cleopatra out of Rio	63 tons

(2.)

From the Cape of Good Hope to Anjeer Roads.

No. of days under sail	32 days 0 hours
Steaming out of False Bay	0 6
Distance run under sail	5,423 miles
steam	25
Average speed under sail	169·46 miles per day, or 7·06 knots per hour.
Total period at sea	99 days 10 hours
at anchor	24 16
Total distance run	14,973 miles

Consumption of fuel 65 tons!!! and the distance for this consumption was 996 miles.

The above requires no comment. 15,000 miles, at an average of 150 miles a day, (in round numbers,) with a consumption of coal of only 65 tons, is unprecedented in the annals of steam navigation; and as the *Reynard's* bunkers hold 70 tons, and 10 or 15 tons more fuel could be put in other places, if necessary, it may be presumed fairly that she could go from England to India without coaling!!!

The draught of water on arrival at Batavia was:—

	ft.	in
Aft	12	0
Forward . . .	11	0
By the stern	1	0

At 7 A.M. on the 10th of October, the anchor was at the bow as we left Batavia Roads under steam, and at 11 passed the South Watcher within half a mile, the Thousand Islands (more or less) in sight. At 3h. 30m. passed the North Watcher—sounded hourly in 12 and 13 fathoms. On the 11th, at 9 A.M., the island of Lucepara, at the entrance of the Straits of Banca, was seen, a dangerous shoal extending some distance from it. To avoid this, the best plan is to keep over on the Sumatra shore, where the soundings are regular, and the bottom soft mud. I thought an English vessel, which came to an anchor suddenly in the middle of the passage, had got on the shoal, and stood for her to render assistance if wanted. She proved to be the *Mary Rae*, of Liverpool, out 104 days; and having been taken aback, and not knowing her position very accurately, brought up to prevent accidents. On we proceeded through the straits in a dead calm, weather intensely hot, engine-room 120°, stoke-hole 138°!!! At 3 A.M. we observed a ship at anchor, which I made sure was the *Cleopatra*, as she proved to be as we closed her, and at 4 A.M. had her in tow; but

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we made small progress at first, owing to a strong tide against us. These *irregular* tides and the quantity of drift wood, (which in a screw vessel it is almost necessary to avoid to prevent the propeller being injured by collision with it,) render the navigation of this strait anything but pleasant in the dark, and I considered myself fortunate to get through without any casualty. At 8 A.M. a breeze sprang up from the S.W., on which we cast off the *Cleopatra*, and proceeded under sail until 5h. 30m. P.M.; when, as it was nearly calm, and she was very short of water, we again took her in tow; at midnight of the 12th cast her off again, as the wind had freshened to a 5-knot breeze, (without the aid of steam,) and we lifted the screw up once more. We sailed pretty evenly together all Saturday, the 13th, though of course in such smooth water, and nearly empty, the *Symonite* frigate had the advantage. At sunset it fell calm, and we again took the *Cleopatra* in tow. The calm continued all night; our rate of steaming averaged 4·5. At daylight saw Bintang Hill, and found a northerly set; rounded the dangerous reef to the southward of the island of Pedro Branco at 6 P.M., and shaped a course for Singapore Roads. The lights of the town were in sight by 11 P.M., and at midnight we anchored in 3½ fathoms, just before a heavy squall burst over us, which would have effectually stopped our steaming. Here we found the *Amazon* had arrived the same afternoon from China; Captain Troubridge having been appointed senior officer in the Straits.

At daylight on Monday, October 15th, Captain Russell, the harbour-master, came off with our letters and my orders to proceed to Hong Kong, calling at Labuan, to fill up with coal. As the *Cleopatra* had similar orders, and as we both purposed sailing the same day, I obtained permission from Captain Massie, as it was scarcely out of my way, to take the mails for Sarawak, that had been detained here the last two months for want of a conveyance. We received the greatest attention from Captain Loudon, the Commissariat officer in charge of the E. I. Company's coal store, and every facility was rendered us in completing fuel. Coolies filled the lumps and brought them off; and we had taken 50 tons on board by Wednesday evening. Water came off in tanks, supplied by contract by a most excellent civil Chinese merchant, named Whampoa, who has also the fresh beef contract. From him we purchased such provisions, bread, &c., as were necessary to complete to 56 days; and on Saturday, the 20th, at 9h. 30m. A.M., our anchor was up, and we were under all possible sail (starboard studding sails) for our destination; *Cleopatra* having had the start of us by about half an hour. At 4 P.M. had a narrow escape from getting on the Pedro Branca shoal, to the southward, owing to a strong tide or current setting to the N.E., at the rate of at least four miles an hour. We rounded to with all our studding sails set, and tacked, and went to the northward of it. On Sunday, the 21st, it fell calm, and as the current appeared to be setting us on the Macapas Island, the kedge was dropped in 26 fathoms. We found this current setting (by the log) E.S.E., 1½ miles an hour. There being no signs of wind we got the steam up, and at 6 P.M. we were again under weigh, passing the

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Cleopatra at 11 P.M. On the 22nd, at 7h. 30m. A.M., we lifted the propeller, and banked up till 7 P.M., when the wind failing, we steamed again until 6 A.M. of the 23rd. This is a most dangerous navigation. We passed over a shoal to the northward of Merindan, not laid down in the beautiful Dutch chart I bought at Batavia. We had bottom on it in 7 fathoms; and found afterwards, by a reference to an unpublished chart of Lieutenant Gordon's, who surveyed the "Natunas" in H.M.S. *Royalist*, that we must have passed very close to a most dangerous reef. Mem.:—In navigating this part of the "China Sea," leadsmen should never be out of the chains.

The afternoon of the 23rd turned out very squally, and we stood in for Cape Datu, under single reefed topsails and foresail. At sunset the wind died away again, and we steamed in, anchoring off the bar of the Santabong River a little before midnight. At daylight we started again; and after some difficulty, owing to a thick haze which overhung all the low land at the entrance of the river, succeeded in making out the little island "Salak," by which the course over the bar is directed. Our chart was a tracing of Mr., now Sir James, Brooke's original one, made on his first visit to this country in the *Royalist*. Fortunately it was neap tide, so its defects did not much signify, and we never had less than 3¼ fathoms on the bar.

At 7h. 40m. A.M., we rounded a low point, off which is a dangerous ledge, and entered the river; and now a glorious prospect opened to our view. On the left, almost overhanging the river, towered a magnificent mountain, which, from its resemblance to that at Rio, was instantly named the "Corcovado." At its base, almost buried amongst the thick foliage of the surrounding forest, nestled a Dyack fishing village, the inhabitants of which gazed in wonder at us as we shot rapidly past, giving them a scream with the whistle *en passant*. The opposite shore, of moderate height, was fringed to the water's edge with the splendid foliage of an almost impenetrable forest; and the stillness which prevailed added an interest to the picture that rendered it most imposing. No sound, save that of our engine and an occasional scream of a bird, or the chattering of a monkey, broke the solemn silence; it was as though a dream were being at length realised, and I could scarcely believe the fact of my being actually proceeding up one of those "mysterious rivers of Borneo."

Sarawak, the capital of the Rajah, "Sir James Brooke's" dominions, is about 24 miles from the sea by this branch of the river, and 17 by the Maratabas. The latter is the branch most commonly used by European vessels; for even the *Nemesis* found the other a difficult navigation, owing to the contracted and sudden windings. We found, however, no difficulty, thanks to the propeller and the ship's excellent steerage. At the junction of the two branches, the river, now the Sarawak, opens out to a considerable width, and the banks, from being low, become diversified with knolls of rising ground, in some places partially cleared, and dotted with the Dyak's huts, evidently of late construction, as if their rise was owing to the increased security of property in this heretofore wild region. In the last reach, and about

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a mile below the town, is the "ledge" on which the *Samarang* was all but lost. It extends more than two-thirds across the river, leaving a very narrow channel on the starboard hand going up, the opposite side being of moderate width. We took the former, not being able distinctly to ascertain which was the proper passage; but by keeping so close in that the "boughs" swept the rigging, we passed through safely, and never had less than four fathoms. (I should like to examine this place at low water springs). I fired a gun directly after passing this danger to give notice of our approach, but no one came off to tell us where to anchor, and for the requisite information I had to hail a very John Bull looking personage, who with a crowd of natives was staring at us. At 11h. 30m. A.M. the anchor was dropped in 7 fathoms, abreast the Rajah's residence, (a picturesque looking dwelling,) and I immediately landed to pay my respects.

"SHAKINGS" FROM SMYRNA.—*By Mahmouz Effendi.*

(Continued from N. M. for 1851, page 607.)

Mr. Chatterton's schooner-yacht, *Flat-Fish*, lay snugly moored off the Esplanade, which at Smyrna forms the centre of the seaward front of the city, near the Cassino and the English Consulate. And the only craft in her immediate vicinity was the Yankee corvette *Mormon*, Captain J. Smith; but towards Menimenn, on the north, floated several English men-of-war; and to the southward was a large French frigate, *La Jujube*, 50, lying outside a crowd of merchant vessels of all nations and rigs, which had properly dropped their anchors opposite the most trading part of the place, that which is situate at the foot of the steep acclivity—so royally crowned by the picturesque buildings of Turk Town—a *mahallè* so frequently a tantalizing scene of mystery to many a chin-shaving Frank *milordos*, whether hailing from Manchester or the "Great Metropolis."

Mr. Chatterton's yacht is certainly by a score not the only British one which has visited Smyrna, distant as that Anatolian port is from England some three thousand miles. Rajah Brooke's *Royalist* was seen in that bay fifteen years ago; Mr. Oglander's *Sybille* was lying there last year (1851); and the *Gondola*, 141 tons, belonging to Viscount Canning, is recorded as unfortunately wrecked at Smyrna in December, 1840; part of her crew and stores being subsequently landed at Cowes, 16th March, 1841, by the *Turquoise*, Lord Lorraine. Yachting trips to the Mediterranean are, moreover, evidently on the increase, as any one may perceive by a reference to the columns of *Bell's Life in London*, the pet weekly paper of our aquatic clubs; and yachting itself has now taken so firm a root in the English mind, that no less than eighteen *Royal* clubs, patronized by the Queen and Prince Albert, are in existence in this present 1852, containing in the aggre-

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gate, as we see by *Hunt's Universal Yacht List*, more than 500 vessels. But our story must now be proceeded with.

Before, however, we actually record the conversation going on in the cabin of the *Flat-Fish*, we wish to observe that the heart of her worthy sailing master, Mr. Jellicoe Jewitt—of whom we have not yet spoken—had, during the yacht's visits to Smyrna, been quite won by the frequent courtesies (figs inclusive) of the merchant Tomkinson, whose *manuscript* (from which we have already so largely quoted*) he had studied over and over again, and like Mr. Surtees, the mate of the *Saucy Fanny*, he had indeed copied down to the extent of about two-thirds of it, in order that on his return to Cowes he might not only enlighten the chubby Mistress Jellicoe Jewitt on the "Wonders of the East," but also instil the like useful knowledge into the precocious brain of his only son, Master Horatio Nelson Collingwood Jewitt, a youngster just ten years of age, destined, we may here mention, in the then approaching year (by special promise from a yachting M.P.) to a berth as naval cadet on board Her Majesty's razeed and lengthened-by-the-bow screw line-of-battle ship *Inevitable*. "Horace may some day come to Smyrna," said Mr. Jellicoe Jewitt, winking his starboard eye, "and I don't wish *him* to be as ignorant then as I found even myself to be when the *Flat-Fish* first dropped her *killick* in these waters. Lord bless my soul! why people in England call the Turks tyrannical, but I've been ashore almost every day, week after week, and as yet haven't *once* seen a fellow receive the bastinado! Rum place this Smyrna, after all; just the spot, tho', for a half-pay Luff to settle in, and I do wonder, that I do, there's not more of 'em in these parts!"

Seeing ourselves, while here waiting for some fresh ink, the great number of merchantmen now bound to Smyrna, (for the morning papers are this instant placed before us,) we shall at once, for certain reasons, offer to their skippers and mates a few extracts from Mr. "Jellicoe Jewitt's Literary Log," and then (having sown such seed in hope) introduce our readers generally to the party in the cabin of the *Flat-Fish*.

Trade of Smyrna.—The English almost monopolize the fruit trade; the French devote themselves to cotton; and the Dutch, who formerly held the principal commerce in their own hands, have now scarcely a representative. The heat of the climate is here moderated daily by a fresh sea breeze, that blows without intermission from noon to sunset.—Warburton's *Crescent and The Cross*, vol. 2, p. 279.—The fruit trade commences its exports in August, and in September, 1851, the *Jupiter* steamer carried off safely to Southampton 16,941 drums, and 4,931 boxes, and 65 skeleton cases of figs, 1,840 drums of Sultana raisins, with other cargo, and £60,000 sterling in specie. No wonder that with such indications of trade as this, English politicians are determined to support Turkey against Russia. Formby, speaking of Smyrna in his *Visit to the East*, p. 60, says—"The trade of all nations is in its harbours, and nearly all spoken languages in its streets. Together with a sprinkling of divers sinister Europeans, upon whose faces no other passion but the love of

* *Vide* our last volume, p.p. 125, 183, 237, 468

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dollars is stamped, there are all manner of surrounding tribes, doubtless owning kindred with the nations of Xerxes' army, each in their national dress; and since the Oriental taste has a strong leaning towards gaudy colours, you will hardly see any one description of costume like its fellow. So given up is the city to its commercial pursuits * * * * that in fact almost the only thing *not* to be found, is a bookseller's shop containing works of real information."

M'Culloch's *Commercial Dictionary* (edition 1850, p. 1212) says, that in 1840 England imported 17,863 cwts. of *figs* from Turkey. The arrivals of English ships at Smyrna are about 130 annually, and of all nations 1000, manned by ten thousand sailors.

Touching the Fig-trade, Albert Smith, who passed through Smyrna in August, 1849, gives the following description (p. 33) in his *Month at Constantinople*:—"I saw nearly two hundred people at Smyrna packing figs in drums for the English market, in a court at the end of a long alley of acacia and fig-trees, under the shade of which the packers took their seats. They first carried them from the warehouses, on the floor of which I saw hundreds of bushels brought in on camels, from the country. They were then pulled into shape—this task being confided to females, and after that sent on to the men who packed them. They gathered six or seven one after the other in their hand, and then wedged them into the drum, putting a few superior ones on the top, as we have seen done with strawberries. Each packer had a basin of I believe sea-water at his side, with some leaves floating in it. When the drum was full, three or four of these leaves were placed on the top, and a little boy took it away to be fastened up. A man gave me some of the figs to eat; they were between ripe and dry, and had none of the saccharine efflorescence about them that we see on our dessert figs in England. The people at work were Greeks, and the girls were mostly very handsome."

Character of the Turks.—I shrink not from avowing that my opinion of my fellow creatures has been raised by my intercourse with the Turks.—(Urquhart). The feature in the character of the people which first presents itself to the stranger among them is hospitality. Their honesty next strikes the traveller.—(Sir C Fellows' *Asia Minor*, p. 295). It was my constant habit to leave on the *outside* of my tent saddles, bridles, cooking apparatus when I and my servant slept *within*, and although persons were passing by and gratifying their curiosity by examining my property, I never lost even a piece of string! Truth, the twin sister of honesty, is equally conspicuous in them, and here the Greek *apologizes* for them thus, "The Mahometan dares not lie; his religion forbids it."

History of the Turks.—See appendix to Formby's *Visit to the East*, and *Blackwood's Magazine* for August, 1842. Timour the Tartar (Tamerlane, *i. e.* Timour-lenk) took Smyrna from Bajazet, A.D. 1402.

Greatness of the Greeks.—It cost nothing to the ancient Greeks to be a great people; they were their own historians, and the modern Greeks will tell as wonderful tales, if they have wit enough to write for posterity.—(Bulwer's *Autumn in Greece*, p. 73).

Life in Smyrna.—Thus writes Counsellor Kinglake, the learned author of *Eothen*, in his fifth chapter:—"Smyrna, or *Giaour Ismeer* (Infidel Smyrna), as the Mussulmans call it, is the main point of commercial contact between Europe and Asia; you are there surrounded by the people, and the confused customs of many and various nations. You see the fussy European adopting the East, and calming his restlessness with the long Turkish pipe of tranquillity. You see Jews offering services, and receiving blows. On one side you have a fellow whose dress and beard would give you a good idea of the true Oriental, were it not for the *gobe-mouche* expression of countenance with which he is swallowing an article in the *National*; and there just by is a genuine Osmanli, ruthlessly run down by an English midshipman, who has set sail on a Smyrna

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hack." Another writer has said,—"The streets of Smyrna present a motley scene, very similar to a masquerade; and as all the ladies who own an Ottoman lord may be truly said to wear masks, there is less difference between the two than might otherwise be supposed. * * * The Turkish ladies of Smyrna wear a black face-cover, like a harlequin's mask. And the Armenians are also muffled up."

VILLAGES NEAR SMYRNA.—Seddi-Keny and Kooklujah are not so often visited as Boujah and Bour'n-abad. These four are the four chief villages in the *immediate* vicinity of Smyrna, and the most distant on the plain is Hajjilar, which is worth visiting. The ride out is most interesting. The best way for sailors to Bour'n-abad is in the ship's boat to the Bour'n-abad *scala*, or landing place, in the bay beyond Windmill Point, and thence walk up to the village, or bestride an *estreck*, a donkey, which animals stand at the *scala* on hire. At Bour'n-abad is a handsome mosque. with some splendid plane-trees in the court. There is also a Bazaar, or Tcharshee. Near the village is a mound called the "Tomb of Tantalus," once King of Lydia, and no other than the royal gentleman who is represented by the Poets as punished in hell with an insatiable thirst, and placed up to the chin in the midst of a pool of water, which, however, flows away as soon as he attempts to taste it. After refreshing at the tavern, (*lostaria* or *meikhanè*,) the Baths of Diana are generally visited before arriving at the *Khiarvan Keuprissy*, or Caravan Bridge of Smyrna. In visiting Boujah, the Plain of Paradise and the aqueducts deserve attention.

DISTANCES FROM SMYRNA.—Syra is 150 miles from Smyrna. The Dardanelles may be called the half-way house between Constantinople and Smyrna. The steamers take forty hours from Smyrna to Constantinople, a distance of eighty leagues.

HORTICULTURE.—Madden, in his *Travels in Turkey*, vol. 1, p. 153, says that the gardens about Smyrna are better laid out than elsewhere in Turkey. Olives, oranges, and pomegranates grow in abundance. The hedges are formed of a very strong ivy, and a species of caprificus. The ranunculi are particularly large, violets are esteemed, and the hyacinth (*Soumboul*) is in request for love affairs among the Turks. When a *karenfil*, or carnation, is exchanged for a *soumboul*, the answer is considered favourable to the lover's suit. . . . . Saffron is abundant.

HORSES AND ATTENDANTS.—Arundell, in 1826, paid nine piastres a day for his horses; Knight, in 1837, paid 280 piastres, (about £2 18s. 4d. English money,) for four horses for three days and nights, forage included, as well as the services of a *Suridjee, i. e.*, a man acting as guide and groom. In travelling, says Urquhart, in his *Spirit of the East*, vol. 1, p. 7, the average rate with the same horses may be 20 to 25 miles a-day, but with post-horses, changing, 60 miles a-day. Twelve hundred miles in ten days is a feat, but not an uncommon one.

WELSH MERCHANTMEN AT SMYRNA.—These vessels bring out to Ionian Smyrna much coal for the steamers, and many Welshmen regard the Greeks as brothers See the *Carnarvon and Denbigh Herald* of 13th Sept., 1851. where one Mr. Solomon Gibson is reported to have said, at the Eisteddfodd, that "the *Greek* language comprised three dialects, and *one of those, the Ionic, was Welsh.*" After referring to the 10th chapter of Genesis, he added that Gomer, the son of Japheth, was brother to the founder of the Greeks, consequently there was a family affinity between the founders of the Welsh and the founders of the Greek languages. It was an impossibility to obtain a knowledge of the ethnology of Lacedæmon, without applying to the Welsh, as recorded in the ancient writings of a distinguished native of Brittany in France. The Welsh language was also of essential service to Dr Layard, for the restoration of the antiquities of Nineveh. Major Rawlinson has found in Asia Minor a monument "to the valiant Cimbri," or Welsh.

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TURKISH FREEMASONS.—The *Farmasoun*, or Freemason, is thus referred to in Urquhart's *Spirit of the East*, vol. 1, p. 165:—"We recognised the Turkish Freemason, or Bektashee, by the polished piece of stalagmite, from the cave of Hajji Bektash, suspended round his neck. There is a Turkish proverb, 'A Christian may become a Mussulman; a Turk a Jew; but a Bektashee is a Bektashee for ever.'" The Janissaries, who were extirpated A.D. 1826, were originally consecrated by Hajji Bektash about ninety years before Constantinople was taken by the Turks, so that, existing till 1826, they flourished as a body for some 460 years.

THE DERVISHES OF TURKEY.—For an account of the "Turning or Dancing Dervishes," see Auldjo's *Constantinople*, p. 73; for the "Howlers," see Knight's *Oriental Outlines*, p 195 and p. 278; and Jeremy Collier's *Dictionary*, (A.D. 1701,) article *Dervis*. In the court-yard of the Howler's *Tekeh*, at Smyrna, are coloured representations of the Seven Sleeper's dog, the Prophet's Mouhammed and Saleh's camels, and the ram sacrificed by Abraham. Dervishes fast every Thursday till sunset. They regard the *nai*, or flute, as sanctified by Jacob and other patriarchal shepherds. Dervishes, under pretence of preaching their faith everywhere, are often employed as Government spies.

ZOOLOGY OF SMYRNA.—The neighbourhood of Seddi-Keuy, a league from Smyrna, abounds with jackalls; wild boars are also numerous; and a few years back lynxes were seen and an hyæna killed, between that village and Boujah. A lion has been met as near as Nymphæum, and wolves are frequently encountered. Reddish brown and black bears are common in the adjacent mountain of Tatarlee, or Takhtalee, (Mastusia,) and a leopard has been slain by a shepherd near Seddi-Keuy.—(Arundell's *Seven Churches*, p. 302.) The Turkish names for these animals are as follows:—

Jackal	Tchakal, *or* Kara Koulak
Wild-Boar	Yaban-domouz
Lynx	Vashak
Hyæna	Syrtlan
Lion	Arslan
Wolf	Kourd
Bear	Aiou
Black Bear	Kara Aiou
Leopard	Pelenk
Tiger	Kaplan

DAOUD DERVISH'S DICTIONARY OF DATES.

JANUARY.
5, 1809—Peace ratified between England and Turkey.
6, ...—Christmas Day of the Armenian Church.
23, 1838—Earthquake at Constantinople.
26, ...—Romanist Festival of St. Polycarp at Smyrna.
31, 1825—Capture of Pirates in the Doro Passage.
31, 1828—Kara-busa (Candia) attacked by Sir T. Staines.

FEBRUARY.
7, 1817—Odessa exempted from taxation for 30 years.
8, 1830—Birthday of Abd-ul-Aziz, present heir to the Turkish throne.
19, 1807—Forcing of the Dardanelles by Admiral Duckworth.
23, ...—Greek Festival of St. Polycarp at Smyrna.

MARCH.
3, 1807—Retreat of Duckworth through the Dardanelles.
6, 1838—Sir C. Fellows visits Abydos. Snow prevails.
26, ...—St. Polycarp burnt at Smyrna, A.D. 167.
—, —Death of the Governor of Widdin, (A.D. 1849,) Hussein Pacha, the last Aga of the Janissaries.

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APRIL.

11, 1822—Massacre of the Greeks at Scio.
20, 1823—Birthday of Abd-ul-Medjid, the present Sultan.
20, 1841—General Thomas Gordon, after 20 years service in Greece, died near Aberdeen.
22, 1821—Greek Patriarch hanged at Constantinople.

MAY.

— —First steamer arrived at Constantinople A.D. 1828. Nine years afterwards the French established a line from Marseilles to the Bosphorus.
1, —Armenian holiday at the Caravan Bridge, Smyrna.
3, 1810—Lord Byron swam from Sestos to Abydos.
5, 1842—The brig *Petit Matelot* attacked by pirates at Scala Nova.
14, 1810—Lord Byron first landed at Constantinople.
15, 1837—Dr. Bulard located himself in the Greek Plague Hospital at Smyrna.
28, 1807—Insurrection of the Janissaries; Selim III. deposed, and Mustapha IV. raised to the throne.
— 1836—Mr. Churchill bastinadoed at Southampton.

JUNE.

15, 1826—Final revolt, and massacre of the Janissaries at Constantinople by Mahmoud II.—(See Knight's *Oriental Outlines.*)
18, 1822—The *Kapou-an Pasha*, and a Turkish liner, burnt by two Greek fire-ships at Scio.

JULY.

1, 1839—Death of Sultan Mahmoud II. at Constantinople, after a reign of thirty-one years.
3, 1845—Fire at Smyrna.
16, —Era of *Hegira* commenced, A.D. 622.
20, 1785—Birthday of Sultan Mahmoud.
29, 1841—Terrific fire at Smyrna.
29, 1808—Sultan Selim III. buried in Stamboul.

AUGUST.

3, 1822—Turks surrendered Napoli di Malvasia to the Greeks.
10, 1690—Napoli di Malvasia surrendered to Venice.
16, —Annual opening at Lemnos of the pit of *Terra Sigilata.*
—, 1851—Town of Mitylene nearly destroyed by fire...
21, ...—U. S. steamer *Mississipi* ashore at Sandjak Kalè, Smyrna.

SEPTEMBER.

— ———Export of figs from Smyrna.
5, 1851—*William and Maria*, merchantman, fired at by the Turkish castle in the Dardanelles.
7, 1851—Kossuth left the Dardanelles in the U.S. steamer *Mississipi*, for Southampton.
12, 1683—Sobieski, with 70,000 Poles and Germans, totally routed 150,000 Turks.
15, 1843—Revolution at Athens, headed by Kalergos.

OCTOBER.

5, 1836—English merchant-brig, *Hellespont*, taken by Greek pirates in the Dardanelles.
9, 1831—President Capo D'Istria assassinated.
20, 1827—Battle of Navarin, Western Greece.
25, 1851—First day of the year 1268, A.H.
26, ———Annual return to port of the Turkish Fleet.

NOVEMBER.

10, 1848—Death in Egypt of Ibrahim Pasha son of Mehemet Ali
14, 1808—Insurrection of the Janissaries. Sultan Mustapha IV. killed.

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Succeeded by Mahmoud II., father of the present Sultan, Abd-ul-Medjid.

27, 1848—First day of the Mouhammedan New Year, A.H. 1265.

DECEMBER.

20, 1832—Battle of Konieh, Asia Minor.

22, 1841—Pisani *v.* Lawson, reported in the *Times*.

We have said, at the commencement of the present chapter, that a conversation was going on in the cabin of the *Flat-Fish*. Mr. Chatterton was there, seated at the head of his hospitable table, faced by his sailing-master, Mr. Jellicoe Jewitt, a privilege which the latter had been denied in most of the yachts he had hitherto been employed in, owing to the *etiquette* of clubs, which usually draws a line more broad between the yacht-owner and his skipper, than that existing in the Royal Navy between the lieutenants and midshipmen, and the commanding officer. But Mr. Chatterton knew himself to be now three thousand miles from Cowes; and however he might bow to such an exclusive rule in the vicinity of the *Medina*, he certainly eschewed it altogether at the mouth of the Meles.

Master Nicolas Collier and Mr. Jellicoe Jewitt had, as might be expected, soon become very sociable; and the supercargo of the *Saucy Fanny*, the consignee, and Tomkinson, and "Chatty Jack," (as the Smyrniotes had christened the owner of the *Flat-Fish*,) completed, with these two worthies, as hearty a half-dozen as probably ever met together for merriment.

"We've no stern windows here," said Chatterton; "the *Saucy Fanny* cuts us all out in that respect."

"But you've a famous skylight," answered the supercargo.

"And a cabin double the size of ours," added Master Nicolas Collier. "You've air enough, without stern windows."

"We're best as we are," observed Mr. Jellicoe Jewitt, "we lie so low in the water; and we, moreover, knock about in all weathers, and in such queer places, that the less glass we show in our stern the better."

"There's reason in *that*," said the consignee.

"Yachts don't want stern-windows that I can see," said Tomkinson; "especially when under 200 tons."

"Two hundred tons is above my size," replied Chatterton. "I find 120 tons, O.M., quite big enough for the Mediterranean."

"As for that matter," said Jewitt, "our English yachts make long passages enough, altho' *under* 100 tons."

"Do they?" demanded the consignee.

"Of course they do," returned Chatterton. "Let me see now; there's the *Iris* and *Albatross*, each but of 75 tons, O.M., and the *Oberon*, 43 tons, made the passage out to Australia and back; and whoever doubts the fact may apply to Ratsey of Cowes, the ship-builder, who knows the whole circumstances. And I could give you a score of cases. But never mind that at present."

Here the mate of the *Flat-Fish* entered the cabin, with the intelligence that two yachts were standing into the anchorage.

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"Let's have a look at 'em," exclaimed Tomkinson and the consignee in a breath; "'tis ever a pretty sight to witness a fresh arrival." All rose in an instant.

Gaining the deck, our party found the "shades of evening" had closed in more rapidly than they expected, but still there was light enough to perceive very plainly a smart schooner-yacht, and another of the dandy-rig, standing in. From the mast-heads of each were shown a green lantern, over four or five signal-lights, red and white, differently disposed in each vessel.

"They're making their numbers," cried Chatterton. "Show our lanterns, Mr. Jewitt, and, boy, hand me up *Hunt's Universal Yacht List.*"

These orders were immediately obeyed.

"And now," continued Chatterton, "fire the bow-gun, and send up a rocket. I expect one of our friends is the *Dewdrop.*"

The rocket rose high in air, and, gracefully turning, emitted a shower of sparks, while a thundering report burst from one of the six-pounders of the *Flat-Fish.*

One of the approaching yachts speedily, in reply, showed a white lantern just clear of her bulwark, and the other burnt a blue light.

During these operations the mate had examined *Hunt's List*, and found that neither of the vessels was the *Dewdrop;* but, much to Mr. Chatterton's astonishment, the *Oxonian* and the *Rigmarole*, both of which yachts he had imagined were up the Baltic.

"Hurrah my hearties!" exclaimed Chatterton, "man the gig! Gentlemen, excuse me for a quarter of an hour, and I'll bring you an addition to our mess. Both these yacht-owners are friends of mine. And, steward, rout out your lockers, and give us a spread fit for a sultan. Is the boat ready?"

"Aye, aye, sir."

(To be continued.)

TRANSIT BEARINGS FOR LOCAL ATTRACTION IN SHIPS.

Oxford Terrace, 29th May, 1852.

SIR,—Having from its commencement in March, 1832, been a purchaser in various parts of the world, as well as a careful peruser, of your invaluable periodical, now complete beside me to the number for this month, I have not in it observed any suggestion, such as one I am anxious (with your permission) to make through your pages to Sir Francis Beaufort, K.C.B., and his valuable department at the Admiralty. A suggestion which seems to me to be more called for, in consequence, not only of the rapid way in which iron is superseding wood as a material for ships, sailing as well as steamers, but because it is also admitted as a material for the mail contract services.

In all books of pilotage and sailing directions, we have given us, as often as possible, the TRANSIT bearing of two remarkable objects, or their bearing when

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in one. These we know to be the magnetic ones, as ascertained before local attraction was thought of, or, at any rate, brought into general notice.

Since the appointment of Captain E. I. Johnson, F.R.S., as Superintendent of Compasses for the Royal Navy, no man-of war has left England without having had her compasses adjusted by his department; and it is probable that in their Log-books and Remarks will be found many of these Transit bearings, in various parts of the world, either mentioned as corrected, being found in error, or as ascertained by the standard compass. A change in the local attraction is less likely to occur in a man-of-war than in any other ship, from guns and other materials of iron remaining in their originalpositions.

The case of the *Richard Cobden*, and others mentioned in your pages, show how much is yet to be discovered as to local and terrestrial attraction.

Were these corrected Transit bearings to be published on a separate leaf in each successive *NauticalAlmanack*, they would be invaluable for correcting by, especially to the iron mail steam ships, whose stay in ports is necessarily so short.

I am, Sir, your obedient Servant,

To the Editor N.M. A. M. S.

[The proposal is good, but requires consideration in carrying out.— Ed.]

Extracts from the Remark Book of the Barque Trident, from Liverpool to Batavia, on the Passage from the Atlantic to the Indian Ocean.

1851. Feb. 5th.—Lat. 30° 30′ S., long. 23° 0′ W., Bar. 30·36, A. 82° W. 78°.—Our steady E.N.E. breeze became very light, the sky cloudy, and at noon the wind hauled to the N.W.; it now became necessary to decide on, whether to adopt the great circle route, say to 30° S. and 100° E. (a point about which it would be necessary to arrive, before taking the S.E. trade in the Indian Ocean). This route would take us to about 50½ S., and effect a saving in the dist. of 130 miles, on the composite track to the maximum lat. of 39° S.; the great circle track, from our position to the point above named, being 5,925 miles, and the composite 6,055 miles. For various reasons I determined on the old route, and at this season run down our easting in about 39° or 38° S.

From the 6th. in lat. 31° 30′ S., long, 22° 0′ W., the current changed from setting us to the S. and E. and set us N. and E., acting somewhat irregularly, but averaging about N.E. 14½ miles each day, till the 25th in lat. 39° 10′ S., long. 23° 35′ E. (Cape of Good Hope, N.W. 450′,) the currents for the last 24 hours N. 45, E. 23 miles. During all this time we had fine weather, the winds rather light, and sometimes easterly, but generally from the W. and N.W., with smooth water, only a long swell from the N.W. The temperature of the air continued very mild, not being less than 60° during the night, and generally 68° or 69° at noon.

The water became gradually cooler, as we advanced southward; thus in

°	°		°	°
Lat. 30 S.	Long. 23 W.	at noon.	A. 81	W. 78
32	14		80	74
35	9		74	68½
37	0		69	66
38	4		67	62

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and the following temperatures I was rather surprised at, and consider somewhat curious:—

Table of the Temperature of the Sea, south of the Cape of Good Hope.

Date astronomical.		°		°	
Feb. 22 d.	0 h.	Lat. 38	50 S.	Long. 12	50 E.	A. 69	W. 62
22	4	38	54	13	15	69	63
22	20	39	10	15	30	68	64
23	0	39	13	16	0	70	65
23	8	39	18	16	55	62	66
23	20	39	24	18	40	67	67
24	0	39	25	19	10	69	68
24	4	39	25	20	30	64	69
24	12	39	20	21	50	61	69
24	20	39	10	23	0	68	68
25	0	39	10	23	35	69	67
25	4	39	10	24	10	67	64
25	20	38	55	26	30	65	63

The rapidity with which the water became warm, and cool again, was observed and remarked by the sailors, as some of it washed on board. As will appear, we were going rapidly to the eastward, just to the south of the Agulhas Bank, the current at the time setting us N.E., nearly one mile an hour. I certainly never observed such a rapid change in the temperature of the sea, away from land and ice, except on the edge of the Gulf of Florida Stream. Whatever may be the reason of this change in the temperature of the sea hereabout, it may ultimately become of interest or utility*. It may probably be the warm water brought from the Indian Ocean in much lower lats. and carried on the S. edge of the stream of the Agulhas current, and met by the general easterly set of the Ocean to the south of 36° S., and thence taking a circular sweep, is finally turned and set to the N.E., something similar to the counter current, which is said to exist, and which I certainly experienced on the east edge of the Florida Stream, in April, 1849, in lat. 31° and 32° N., long. 76° and 77° W., where with little diminution of the temperature of the water, I found the current setting to the S.W. 14′ or 15′ in 24 hours.

Keeping about the parallel of 39° S., we had strong breezes of W. winds, and clear weather, with a long and regular S.W. swell, current setting E., about 20′ per day—Bar. about 30·0; A. at noon, 68°, at night, 60°; W. 62° and 64°. About the first days of March, we had some variable winds; easterly at times, with considerable cross sea, and the current setting W. from long. 40° to 60° E. On the 9th we had a gale at N.E. or N.N.E., on that morning the wind had suddenly increased, and the sky overcast—Bar. 30·2; Ther. 71°; the air was very sultry and had a strange oppressive *feel*, there were curious and sudden transformations among the clouds, but it soon became thick, with drizzling rain and strong gales, a little before noon the Bar. and Sym. commenced to fall, and at 2h. 30m. P.M., Bar. 29·7, Ther. 72°; we at once shortened sail to close reefed topsails and foresail; it blew very hard with a heavy sea, which stove in part of our weather bulwark. From the strange appearance of the sky, the rapid fall of the glasses, and the air being so much more warm and sultry than usual, I was afraid we were in the S.E. quadrant of a regular cyclone, or circular storm, and, if such were the case, being nearly in front of it, I began seriously to think of running away to the S., so as to avoid the centre; but at 4h. P.M. Bar. still at 29·7, and only blowing a heavy gale, (at true N.N.E.,) and taking into consideration the

* I find on my General Chart of the South Atlantic about the same parallel, the temperature of the water marked in long. 10° E., April, 61°; long. 15° E., April, 62°; long. 22° E., March, 76°; and in long. 24½° E., May, 61°.

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path and rate of storms in this region, I still continued standing E., carrying all possible sail, with the determination to run S. 40 or 54 miles if the weather became worse and bar. falling. But after midnight, we had rather less wind though the bar. did not rise; I now carried a press of sail (the wind being now at true N.) to endeavour to make some northing, and keep ahead of the storm, for while we made northing, and the cyclone coming slowly up with us, the wind would become more westerly, so that with a little carrying on, we should get into the favourable quarter of the storm for our passage, while if we ran to the S. of it, we should lose some time. Every rope and spar was creaking again, as the sailors say; but with unutterable satisfaction, I found the wind gradually veering more westerly as it increased, on the forenoon of the 10th. At noon it was rather hazy, strong gales, at N.W. b. N., under a pres of sail, lat. 39° 20′ S., long. 61° 36′ E., bar. 29·6, A. 71°. W. 64°.; at 1h. P.M. a dense haziness surrounded the horizon, the wind and sea were rapidly increasing. The clouds—at times seen through the lower thin misty streaks that were driving with immense rapidity to the eastward—appeared careering to and fro with great velocity, and rapidly changing their form and appearance; some were luried, others leaden coloured, and some dense, black, and threatening; some appeared to be blown in pieces and melted away, others kept their luried and black denseness to the edge, contrasting wildly with the livid brilliancy of the sky beyond. We immediately took in all sail to close reefed topsails; at 4h. P.M. it blew tremendously hard in gusts, with showers, and in the mean time the wind had veered to W.N.W. at 5h. P.M. the wildest appearance of the sky and heaviest black clouds being then to the S. of us. At 2h. P M. the bar. had risen, and that before we had the heaviest of it. The veering of the wind occasioned a tremendous heavy and confused sea; after 4h. it became rather more moderate and clearer, and the bar. rose rapidly; we now set more sail, so as to follow up the storm and take all advantage from it now we were in the right side of it, at 9h. P.M. the wind W. S.W. (true) 8. 9. 6. c, bar. 30·0, and next day we were running E. with all sail, the wind W.S.W., and W.b.S., a very heavy sea from the W. and S.W.

On projecting this storm I find its course and velocity to be about E. or E. b.S. 12′ or 15′ an hour; but we must have been too near the centre for the results to be very correct, as it is impossible to say how the wind might have been, to a point.

Just after we were snug, &c., and running in this gale, I made some observations on the waves, and found the large ones to be 500 feet from top to top, 28 feet high, and about 24 or 25 miles an hour of velocity; and between these large and regular waves, there was a considerable interval of cross running and tumbling smaller ones, being very laboursome for a ship.

After that gale of the 10th, we had pretty steady fresh W. winds, with a S.W. swell, and a W. current of 8′ or 9′ a day; we passed the Island of Amsterdam, on the 15th, after which we had mostly W. and N.W. winds, but some E. and N.E., light and for a short time, with a great S.W. and S.S.W. swell, current N. 70° E., 14′ or 15′ a day, with fine weather, bar. 30·0 and 30·3, A. 68° and 78° W. 64° and 70°, till the 25th March, in 29° S. and 102° E., we took the S.E. wind, a fresh breeze. We had been running all day with studding sails fore and aft, to a fine breeze at W.b.N. and W.; when at 6h. P.M. we had some clouds and rain; the wind at once came round to S.E. and blew a fresh breeze.

N.B. When at Batavia, I was on board a large Dutch Indiaman, which got dismasted in the gale of the 10th March, about 100 or 120 miles to the E.S.E. of us; I regret exceedingly I never had an opportunity of getting particulars from her log.

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COPY OF THE BARQUE "TRIDENT'S" LOG FOR THE 10TH MARCH, 1851.

Barque "Trident," of Montrose, from Liverpool to Batavia. J. Lyall, Master.

H.	K.	Courses.	Winds.	Strgth	Weather.	Bar.	Th.	Sym.	A.	W.	REMARKS, Monday, March 10th, 1851.
1	3	E≤E	NE¼N	9·8	md	29·7	71	29·7	70	64	Close hauled under two close-reefed topsails, and fore-topmast staysail; a heavy cross sea, shipping a great deal of water; washed away part of the larboard bulwarks.
2	3	"	"	8·7	md	"	"				
3	3·5	"	NEbN	7·8	mpd	"	"				
4	4	EbS½S	NNE	7·8	mbc	"	70	"	69	65	At 2 A.M set the main staysail and trysail. At 4 A.M. set the reefed foresail, and let one reef out of the topsails; kept away well full, and eased the lee-braces.
5	6·5	ESE	"	7·8	mc	"					
6	7	"	"	7·8	mbc	"		29·65			
7	7·5	EbS½S	NbE	7·8	mbc	"			71	64	
8	8·5	"	"	7·8	mpd	29·65	71				At 8 strong gales and heavy sea; set more sail; employed securing the yards and masts, with preventer braces, stays, and tackles. Towards noon worse weather and a very heavy sea, washing away bulwarks, &c.; the decks filled with water at times. Pumps carefully attended to. Variation 2½ points W.
9	8·5	EbS	"	7·9	mpd		72	29·62			
10	8·5	"	N	8·9	mbcpd	29·60	71	29·55	70		
11	8·5	"	"	8·9	mbcpd	29·58	"	29·52			
12	8·5	"	NbW	8·9	mbcpd	29·55	"	29·62	69	64	

Course.	Dist.	D. Lat.	Dep.	D Long.	Lat. Obs. 39° 21′ S.	Long. Chr. " "	Bearing and Distance at Noon.
80° E	115	19·7	113·5	146	Lat. Acc. 39° 19′ S.	Long. Acc. 61° 36′ E.	Amsterdam Island N. 83° E. 760.
Log. Dist.	117	Curr.	"	"	Cou. and Dist. made good.	N. 80° E. 115.	

H.	K.	Courses.	Winds.	Strgth	Weather.	Bar.	Th.	Sym.	A.	W.	REMARKS, Monday, March 10th, 1851.
1	8·5	EbS	NbW	8·9	mbcpq	29·65	70	29·7	69	64	P.M. Rapidly increasing gale, and wind veering westerly. Dark and threatening looking clouds seen through the driving mist, flying with great velocity to and fro, and changing their forms very quickly. Took in sail at once to close-reefed topsails, and kept the ship nearly before the wind.
2	9	ESE	NNW	10·9	"	29·72		"			
3	9	"	NWb	11·9	"	29·75		29·8			
4	8·5	EbS½S	NW	11·9	"	29·8		29·9			
5	8·5	"	NWbW	10·9	"	29·82		30·0	67	63	
6	8·5	"	"	10·9	bcpq	29·93		"			
7	8·5	"	WNW	8·9	"	30·02		30·02			A very heavy and confused sea, the ship taking a great deal of water on board.
8	8·75	"	"	8·9	"	30·05		"			
9	8·75	"	W	8·9	"	30·05		"	60	63	At 9 P.M. less wind. Clear above, and dense black clouds round the horizon, heaviest and wildest looking to the southward. Let one reef out of the topsails, and set the foresail. Towards midnight better weather; set more sail. J. LYALL.
10	8·75	"	"	8	bc	30·05		30·1			
11	8·5	"	"	7·8	"	30·00		"			
12	8	"	"	7·8	"	30·00		"	56		

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1851—March 15th—Passed to the N. of the Island of Amsterdam—wind N.W., 5·6, bc, Bar. 30·1, A. 70° W. 65. A long S.W. swell current for the last 24 hours. N. 45° E. 15′.

I make the island in lat. 37° 53′ S.

long. 77° 36′ E. by three chronometers, verified by many lunars, or measured back from Java Head. I make the centre of the island 27° 35·75′ W. of the extreme west part of Java Head, which last I make, by the mean of the three chronometers, to be 1° 36·25′ W. of Batavia time-ball tower, which I believe is pretty near the truth.

March 23rd–24th—Lat. 31° S., long. 101° E., a heavy long rolling swell from the S.S.W., the ship sailing 5·5 miles an hour N.N.E., equal to

33,434·5 feet in 60 minutes
557·4 " 60 seconds
167·2 " 18 "

From top to top of the swell, 455 feet
Angle of elevation of the side, 4.25° } average of 57 waves { Length from 398 to 492 feet
Time of passing the ship, 18 sec. } { Time, 10s. to 22s.

This gives the height above the level 8 feet, and depression below ditto, 8 feet; total height, 16 feet. Velocity, 455 feet in 18 sec. + rate of ship, or 167 feet in 18 sec.

622 feet in 18 seconds
2,073 " in 1 minute
124,380 " in 1 hour

Or about 24·5 miles

And anything afloat was 13 seconds from the top of one wave to the top of another (63 obs.). The waves appeared as beautiful and regular large undulations; the sea smooth, and the weather fine; the wind a No. 4 breeze at W.N.W.

April, 1851—"*Trident*," *at Batavia*. J. LYALL.

THE AMERICAN EXPEDITION AGAINST JAPAN.

From the New York Courier and Enquirer.

The unusual strength of the force about to sail, and the fact that the most distinguished and proverbially the most efficient officer in the navy, Commodore Perry, is about to assume the command of the East India squadron, have naturally excited more than ordinary inquiry and discussion in relation to the immediate objects of the expedition. By some it has been characterised as a warlike expedition; and very generally it is believed to have in view offensive operations against the empire of Japan. In common with our contemporaries we have instituted inquiries in regard to the objects of the expedition, and we are gratified to learn that it is designed to be entirely peaceful in its character; but, at the same time, sufficiently imposing to command respect in the enforcement of justice, and of sufficient strength to enforce compliance with all proper demands.

The empire of Japan covers an area of more than one hundred thousand square miles, and lies between the 30th and 43rd degree of N. latitude, and the 129th and 143 degree of E. longitude; and lying on the eastern side of the continent, has a climate similar to our own, between the same parallels of latitude; that is between New Orleans and New York. Its population is estimated at 30,000,000, and, covering an archipelago, its sea coast is more extensive than the whole Atlantic coast of the United States. It not only lies directly opposite our possessions on the Pacific coast, but the two great

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islands of Niphon and Yesso form the Strait of Sangar, through which hundreds of our whale fleet are compelled annually to pass; but to land upon the shores of which for supplies of wood, water, or the necessaries of life, or to be forced upon them by stress of weather, subjects the unfortunate whaler to robbery or death. Japan not only refuses to hold commercial intercourse with the rest of the world—a very questionable right—but she goes further, and, occupying as she does an enormous extent of sea coast, she not only refuses to open her ports to foreign vessels in distress, but actually opens her batteries upon them when they approach within gun-shot of her shores; and when driven upon them by stress of weather she seizes upon, imprisons, exhibits in cages, and actually murders the crews of such ill-fated vessels.

Now, we deny the right of any nation situated upon, and occupying a portion of the sea-coast of the world, to refuse all commercial intercourse with other nations. Such a course may be tolerated by civilised nations so long as it does not interfere with their commerce and the welfare of the human race; but we insist that it is the right of civilised and Christian nations to compel barbarians thus situated to submit to the general law of nations, and to a certain degree of intercourse; and especially it is the right of all the nations of the world to have free access to every port and every part of the coast of the whole world in times of distress and danger, and to demand at the hands of the people occupying such harbours and coast, protection, aid, and hospitality. This, we say, is the right of all nations in all the harbours and on all the coasts of the world; and when this right is denied and withheld, it becomes the duty of a commercial people to remedy the evil, and to secure to their commerce the protection to which it is so justly entitled. Japan denies this right. Among the hundreds of American whalers annually compelled to pass the Straits of Sangar, some are inevitably forced, by stress of weather, upon the inhospitable coasts on either hand, and the consequences are imprisonment or death; and vessels in distress, instead of being permitted to make a friendly harbour for repairs and to refit, are compelled to keep at sea, to the almost certain destruction of all on board. This has been submitted to too long already, and the constant increase of our whale fleet, and the consequent increase of disasters in this barbarous and inhospitable region have compelled our Government, unprompted except by its wise foresight, to insist upon a reform in the policy and bearing of the Japanese towards the rest of the world. The single fact that at one time within the last year there were 121 American whalers lying in the harbours of the Sandwich Islands—far away from their cruising grounds, because they could not enter any harbour on the coast of Japan for repairs—shows not only the extent of our commerce in that region, but the claims of humanity itself for protection against the barbarians, who thus cut off, as it were, the commerce of the Yellow Sea, and the Sea of Ochotsk.

Without being prompted thereto, as has been charged, by the merchants of this city, but in obedience to a wise policy, which seeks alike to extend our commerce, and protect our manufactures and agriculture, the Administration has most wisely determined to demand redress for past grievances from Japan, and to insist that in future the seamen of the civilised world, when cast upon their shores by the providence of God, or when compelled to seek refuge from the elements in the harbours on their coast, shall be treated with humanity at least, if not with the hospitality which it is their right to demand under such circumstances. With this view Commodore Perry has been selected to command an expedition, which will necessarily require great prudence and discretion, united to great forbearance, firmness, and perseverance. These high qualities have hitherto been exhibited by Perry on several occasions; and these qualities have, it is said, changed his destination from the Mediterranean, and the pleasures and attractions of the most desirable command in the navy,

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to the command of an expedition which would be far from acceptable, were it not for the good it promises mankind, and the certain protection which its successful termination will insure to American commerce in the east. The squadron will consist of the steamers Susquehanna, Mississippi, and Princeton —the former of which will be the flagship; a frigate, a sloop-of-war, and a storeship; and we imagine from what we can learn, that he will take with him light field guns, and whatever armament may be necessary to compel obedience to such demands as he may make for the redress of past grievances, and for the surrender of certain American sailors now held in bondage, and, it is said, exhibited in cages through the country.

We sincerely rejoice that the Administration has projected, and finds itself at leisure to undertake, this all important expedition; and that, too, without any other additional expense than the transportation of coal for steamers to so distant a region. That it can thus divert a portion of our navy afloat from other quarters is the result of the wisdom which has guided its foreign relations, and preserved it aloof from "entangling alliances," in obedience to those counsels of Washington which Kossuth and his toadies have so mercilessly ridiculed. And we rejoice, too, that what is about being done will be as much for the benefit of the whole civilised world as for that of the United States. If we are correctly informed, Commodore Perry will not only demand redress for past offences against us, and the release of all American prisoners, but he will also insist upon the release of all who may be held in bondage merely from having been cast upon their shores by Providence, no matter to what nation they may belong. And he will insist too that in future all the nations of the world shall have the right to seek the harbours of Japan in stress of weather, and to repair damages; and that they shall be hospitably received and their wants be supplied by such as may be disposed to aid them, instead of punishing with death, as at present, whoever dares to succour the distressed. So far as commerce is concerned, if anything can be accomplished, it will, of course be the result of peaceful negotiation; and he will negotiate for the United States only. But he will claim and insist that all nations and peoples shall have the right to use the ports of Japan in distress, and be protected by the Government. We do not suppose that he will attempt forcibly to interfere with any of their police regulations, or demand the right to land men, if the wants of commerce are freely supplied without landing. But, once give the civilised world access to the harbours of Japan, and that great empire will no longer remain a *terra incognita*. Such access must lead to commerce, and commerce is the great civiliser of mankind. It may be years before we get free access into the city of Jeddo, the capital of the empire; but it will not be long before some clever Yankee informs us whether it has a population of 2,000,000 or only 500,000 souls. We shall then soon learn, too, whether the standing army of the Emperor consists of 525,000 men, including 60,000 cavalry, or of nearly 1,000,000 of men, of whom 100,000 are cavalry. What we do know is, that Japan raises an enormous quantity of wheat, rice, barley, &c., which, together with silks, gold, copper, and silver, are sent down the coast to China, and that the revenue of the empire is estimated at 140,000,000 dolls. We do know that every city and port is strongly fortified, as is the whole coast; and that if one of our whalers, in beating through the Straits of Sangar, gets within two miles of the shore on either side, she is sure to have a battery opened upon her; and if shipwrecked, her crew are taken prisoners and never permitted to return to their country and their homes. We do know that these things should not and will not continue to exist under the present Whig President, with Daniel Webster at the head of the State Department, and W. H. Graham Secretary of the Navy; and we hope and trust that the day is near at hand when, under a judicious protective system, we shall be sending enormous quantities of cotton goods, iron, &c.

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to Japan, and receive in return her gold, silver, and dyewoods; at the same time that the commerce of the world will find in her numerous ports safe and hospitable asylums, instead of the barbarism now extended towards it by one of the most populous kingdoms of the earth.

FALL OF RANGOON AND MARTABAN.

THE following extracts relative to the capture of these places:—

BOMBAY, MAY 3rd.—Yesterday's post brought a telegraphic despatch announcing the capture of Rangoon and Martaban. To-day's post (this instant received) has brought further particulars. The following is from the *Calcutta Morning Chronicle* of the 24th of April.—H.A. 5. vi. 52.

"Yesterday morning the electric telegraph announced the arrival of Her Majesty's steamer of war *Rattler*, from Rangoon, with the flag of Vice-Admiral Austin flying, that officer being himself on board. When passing the sea terminus of the Electric Semaphore, the steamer signalled the taking of Rangoon and Martaban, the former on the 14, and the latter, as reported by mistake, on the 15th. Martaban was taken on the 5th by the Moulmein brigade, commanded by Lieutenant-Colonel Reignolds, C. B. of the 18th Foot, and consisting of the right wing of that regiment, the right wing of Her Majesty's 80th, and Madras regiments quartered at Moulmein, and the artillery. The capture of Martaban was a work of comparative facility, the troops having been landed under a protecting fire from the ships, led by her Majesty's ship *Rattler*, and advancing rapidly in conjunction with the artillery, upon the works of the enemy. The whole operations lasted, we believe, only some four or five hours, when the place was ours. After its capture the troops re-embarked, and proceeded to the Rangoon river, where they and the Madras troops joined the Bengal force, and the operations against Rangoon commenced. On Easter Sunday, the eleventh, the entire squadron proceeded up the river, not intending, however, to commence operations on that day, but the steamers towing the transports up having taken them higher up than was intended, they came within the range of the river batteries of the Burmese, which immediately opened upon them, and a reply was inevitable. A terrific cannonade was then commenced on both sides, the steamers opening their broadsides on the river face of the Burmese works on both banks of the river, and entirely demolishing them, both at Rangoon and Dalla. Her Majesty's ship *Serpent* then proceeded up to Kemmendine, upon the works of which place she opened fire, but the return was so severe and the enemy's guns so well served, that the brig was obliged to haul off, and send down the river for aid, when two war steamers were sent up to her assistance. With these the Kemmendine batteries were silenced, and a landing having been effected, the enemy deserted the works, which were occupied by sailors and marines from the ships, and European troops. During the cannonade and shelling on Sunday, besides the destruction of the Burmese works on the river face, the enemy suffered great loss by the explosion of their powder magazine, a shell from one of our guns falling on it, and causing it to blow up with a terrific sound. On Monday, the 2th the land operations commenced, the troops effecting their debarkation under the protection of the ships' guns, and all the boats of the squadron being employed in effecting the landing. Here the brunt of the work commenced, as it was necessary, soon after landing, to attack and capture a strong stockade a short distance in shore, where the enemy fought most gallantly and caused considerable loss to our force. On Tuesday, 13th, there was a pause, which was occasioned by the unavoidable delay in landing the heavy guns from the

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ships, the last of which did not arrive in the camp, if we may so call the bivouac of the troops, till midnight on the 13th. On the 14th, in the morning, the entire force broke ground, and advanced towards the great Pagoda stockade, throwing out skirmishers, the Burmese also fighting well in their fashion, and knocking over many of our men. Nothing, however, could check the advance of our soldiers, seconded by a tremendous fire of artillery, and they advanced rapidly but steadily towards the Pagoda stockade, taking some minor ones in their forward movement. At length, towards noon, it was resolved to deliver the general assault, which was made by all arms with the greatest spirit and intrepidity, on the north-east angle of the Pagoda hill and stockade, when the enemy gave way and retreated at all points. They never expected that the assault would have been made at this point, and a gate was actually found open there, through which our troops rushed in and instantly occupied the place, when all the fighting was concluded by two o'clock in the afternoon.

REAR ADMIRAL C. J. AUSTEN TO THE GOVERNOR GENERAL OF INDIA IN COUNCIL.

Rattler, at Rangoon. April 16, 1852.

My Lord Marquis.—While congratulating your Lordship on the success that has hitherto attended the expedition against Burmah, in the storming and capture of the strongholds of Martaban and Rangoon, I trust your Lordship will permit me to bring under notice the support that I have received from all the officers and men under my command, forming the naval part of the expedition. The embarking and disembarking the troops, baggage, and military stores, the arrangements for the transports and for victualling the combined forces, have furnished almost incessant night and day work for the officers and men under my orders. It has been done on all sides with the utmost cheerfulness, and this large force has been moved up a rapid river without any accident of moment having occurred; and I have, up to the present time, to thank every officer and man employed under my orders for the cheerful manner in which they have undergone so much toil in this distressing climate.

To the Commodore I feel under especial obligation. His local knowledge proved valuable, as his judgment and discretion were most useful. It would be impossible to value the services of an officer, second in command, more highly than I do those of the Commodore.

Captain Lynch, senior officer of the Indian Navy, has, by his ability, judgment and discretion, rendered essential service.

Commander Mellersh, of my flag ship, and Commanders Fishbourne and Tarleton, have rendered every possible assistance in carrying out all necessary arrangements. I was an eye-witness to Commander Tarleton's bravely leading his men to storm a stockade, to his being the first to mount the walls, and to enter it. Commander Luard, of Her Majesty's sloop *Serpent*, has been employed many months in these waters. A more zealous and indefatigable officer is not to be met with, and, relying upon his ability, he has frequently been placed in charge of responsible duties. With the assistance of the East India Company's steamer *Phlegethon*, commanded by G. T. Neblett, Esq., he destroyed the De Silva stockades. When the action on the 11th of April commenced, he passed along the line of fire in the sloop under his command, to above Kemmendine, for the purpose of preventing the removal of the war boats; and whilst on this service he was attacked by a very important stockade, and an Officer (Mr. C. Sproull, Assistant-surgeon) and seven of his men were wounded, but which he ultimately succeeded in silencing. Before the commencement of the war he took great pains in surveying the coast and river, and his information was afterwards of great use.

The Commanders and Officers of the Indian Navy and of the East India Company's uncovenanted service, have, without a single exception, performed

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their duties with all possible alacrity. Captain Brooking of the *Proserpine*, had at Martaban, an opportunity of particularly distinguishing himself, of which he took good care to avail himself; and it is with great regret that I found myself under the necessity of leaving him at Moulmein, for the protection of British interests, and thus losing his valuable services here.

Lieutenant George Rice, in temporary command of the *Maha Nuddie*, rendered essential service to the cause, admirably handling his little vessel: he landed men on the beach to storm stockades, covering their landing with his own guns, and at the storming of them he was to be seen among the foremost ranks. In landing men, stores, and baggage, and ascending the narrow creeks of the river the *Maha Nuddie* has proved most useful.

Senior Lieutenant Dorville, of my flag ship, commanded the Naval Brigade at the capture of Rangoon, and from the flattering manner in which the Commander of the Forces has been pleased to speak of his services, I feel assured he must be honourably mentioned in the Lieutenant-General's despatches.

Among those who have fallen victims in the service of their country upon this occasion it is my painful duty to record that of the Rev. Thomas T. Baker, Chaplain of Her Majesty's ship *Fox*. Incessantly employed in administering to the wounded and dying, and in burying the dead, he fell a victim to the prevailing epidemic cholera, on the 16th instant, leaving, I am informed, a widow and young family, who were wholly dependent on him for support.

I was an eye-witness to the indefatigable exertions of Mr. Minter, surgeon of the *Fox*, at the Hospital on shore, and on board the *Tubal Cain*. Dr. Montgomery, Superintending Surgeon, expressed himself to me as being under the greatest obligations to him for his assistance. In addition to the duties performed by Dr. Minter, at the Hospital, he had those of his own ship to attend to where the cholera had broken out with some virulence. Mr. Seccombe, Assistant Surgeon of the *Hermes*, was also employed at the Hospital on shore.

In conclusion, I beg to remark that the whole conduct of the officers and men under my orders, employed on the present expedition, has been such as reflects much credit on themselves and on the services to which they respectively belong. I have, &c.

CHAS. JNO. AUSTEN, Rear Admiral.

FORCE EMPLOYED IN THE EXPEDITION AGAINST BURMAH.

Her Majesty's Ships.

Rattler, Commander A. Mellersh, 130 men, eleven guns. Flag-ship. Two guns received from *Fox*

Fox, Commodore G. R. Lambert, 298 men, 40 guns. Two guns lent to *Rattler*, and twelve seamen to *Maha Nuddie*

Hermes, Commander J. Fishbourne, 120 men, 6 guns

Salamander, Commander J. S. Ellman, 135 men, 6 guns

Serpent, Commander W. Luard, 125 men, 16 guns. Four guns received from Calcutta

A gun-boat, Mr. R. C. Copland, Acting Mate, 10 men, 1 gun

Total—818 men, 80 guns

Steamers of the Indian Navy.

Feroze, Captain H. B. Lynch, 230 men, 7 guns. Senior Officer

Zenobia, Commander, A. B. Hall, 200 men, 6 guns.

Moozuffer, Commander H. H. Hewett, 230 men, 7 guns

Sesostris, Commander C. Campbell, 135 men, 4 guns

Medusa, Lieutenant H. A. Fraser, 60 men, 5 guns

Berenice, Lieutenant A. Nisbett, 97 men, 1 gun

Total, 952 men, 30 guns

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Uncovenanted Service.
Tenesserim, Captain W. Dicey, 80 men, 6 guns
Pluto, Captain C. Burbank, 86 men, 7 guns
Phlegethon, Captain G. T. Neblett, 86 men, 6 guns
Proserpine, Captain A. Brooking, 86 men, 6 guns
Enterprise, Captain A. Fryer, 70 men, 2 guns
Fire Queen, Captain H. Boon, 70 men, 2 guns
Maha Nuddie, Lieutenant G. W. Rice, R.N., in temporary charge, 22 men, 4 guns
Tender to *Fox*, 12 men received from *Fox*
Total, 500 men, 33 guns.

NAUTICAL NOTICES.

DANGER POINT SHOAL, CAPE OF GOOD HOPE.

To the Editor of the Cape Monitor.

SIR,—As anything relating to Danger Point Shoal (the locality, I believe, of the late distressing shipwreck) will be interesting to the public, I beg to offer a few hydrographical remarks on that locality, derived from the opportunity I had, when carrying on an eastward triangulation, by command of the Lords' Commissioners of the Admiralty.

One of my trigonometric stations is upon the southern extremity of the bluff or promontory of Danger Point, at the height of 1,055 feet above the level of the sea.

From the bluff, a tongue of low ground, partially covered with bush, runs out south-westerly at angle with the meridian of 63¼ degrees; then submerges, forming a ridge or shoal in the same direction, gradually deepening, and extending out to a considerable distance. During a gale, the water seemed to break as far as two miles or more from the extremity of the land, though the farthest out visible rock in calm weather was only about 500 yards from it.

This projecting land, and its continuation under water, forms the west horn of an extensive bight or bay, of which Gunner's Quoin, with its projecting shoal, is the eastern. Dyer's Island is situated close in on its eastern side, separated from it by a narrow channel. It forms, also, the eastern horn of the sweep to Mudge Point.

On the south-east side of it the shore is rocky; but a boat may pass along it, and through the narrow channel just mentioned, up to the sandy beach in the immediate vicinity of two farm-houses. On the north-west side the shore is also rocky, but I think less so. Close in is a stalactite cavern, immediately under the bluff; whence to Mudge Point the beach consists chiefly of sand. On this side I do not recollect having seen any house nearer than the one now occupied by Captain Smales.

The rocks are chiefly of sandstone; but on the land, this formation is combined with limestone,—the characteristic of all the promontories between Hanglip and L'Agulhas.

With respect to geographical position, I observed the depression of the extremity of the point below the horizon of my station. From this, together with elements derived from triangulation, I find that the latitude of the Point is 34° 37′ 34″; the latitude of the breakers before-mentioned about 34° 40′, and their longitude east of the Naval Yard, Simons Bay, 52° 12′.

If the *Birkenhead* passed out of False Bay at an equal distance between

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Cape Point and Hanglip, and then pursued a direct course towards the shoal, she would encounter it after a run of about fifty-three nautical miles from the anchorage; and if she had passed over it without touching, and kept the same course, she must have run foul of Gunner's Quoin. The most probable conjecture (in ignorance of her course) is, that Hanglip was hugged too closely.

I am, Sir, your obedient servant,

March 4, 1852. THOMAS MACLEAR.

BANK OFF CAPE VAN DIEMEN, NEW ZEALAND.

H.M. Surveying Vessel Pandora.
Auckland, 11th December, 1851.

SIR,—I hasten to report, for the interest of navigation, the existence of a dangerous bank in the direct course of vessels bound to the west coast of this island round Cape Maria Van Diemen, on which Her Majesty's surveying vessel under my command had a favourable opportunity of anchoring and sounding.

The magnetic bearings from Cape Maria Van Diemen are from S. ½ E. to S S.W., to outer edge 8 miles, and from * Motu Pea, E. by N. ½ N. to E. ½ S., to the outer edge 10 miles; has from 5 to 7 fathoms on it; coarse sandy bottom.

This bank covers three square miles, and has hitherto been considered only as a tide-race, but would be dangerous at most seasons from the heavy westerly swell prevailing on the west coast.

I have, &c.,

(Signed) BYRON DRURY, Commander.

N.B.—The island of Motu Pea (not in the existing charts) is S.E. 11 miles from Cape Maria Van Diemen, and is 2 miles from off the long sandy beach.

The Honourable the Colonial Secretary, Auckland.

[* We print as received, but presume that Motu Pea is meant as bearing to the eastward.—ED.]

REMARKS "ON NINGPO AND ITS APPROACHES,"—*by Mr. G. B. Swain, Master, R. N.*

NINGPO being a place of little export trade, does not offer a sufficient inducement to pilots to reside there, and which circumstance alone will render any information on the locality useful to those who may have occasion to visit it.

The first object should be to make "Lookou," or as it is sometimes called, "Ta Outse" harbour—and then wait for a favourable tide and steady wind. The assistance of the commanders of the opium ships is most valuable, and as these gentlemen frequently render their gratuitous services to strangers bound into Chinhae, such kind offices will be readily obtained, if properly solicited.

The passage from Shanghai, requires no comment; but for ships from the southward, with a commanding breeze, the channel on the south side of Kevan Island is to be preferred.

In all these channels, especially the Sarah Gulley, Beak Head, Vernon, &c. which are narrow and very deep, the rapidity of the tides, and the eddies (which are named "Chow Chow water") are so powerful as to render ships quite unmanageable, and entirely at their mercy, oftentimes threatening instant destruction on the rocks; and therefore either of these channels should be approached with every caution.

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If the tide is not favourable for getting through, it would be advisable to go round by Fisherman's Group, and then down to the westward by Volcano group.

The best anchorage at Lookou is, the western extreme of Taping Island, (about) N. b. W., and the northern extreme of Taoutse (about) east, in ten fathoms.

The time for leaving Loukou must be regulated so as to approach the Takea at the first of the flood. If the wind is at N. W., the best passage is to the westward of the Yew Islands; but with a S. E. wind, the eastern passage is to be preferred, keeping on the south side of the Sesostris rock. If the wind is scant after passing Passage Island, tack in time, and draw up on the starboard tack, anchoring and weighing as found necessary.

The unpleasant effects resulting from the gusts of wind and calms, experienced in passing ravines, &c., are remarkably felt in going into the Takea, especially from between the hills on the S. E. side; and these combined with the strong tides running out from Hang Chow bay, between the islands and over the deep chasms in the bottom, render the navigation of the narrow passage into Tahae of more than ordinary danger and difficulty, particularly at spring tides.

There is a rock not laid down in the chart, near the bank on the south side after passing Sesostris rock, and on which the English barque "*Moltan*" struck —it has 9 feet on it, and 18 feet close to, the marks from it are, Friendly bluff just showing to the northward of Pass yew, and the northward extreme of Lookout hill, east.

Arctic Expedition.—*Relief of the Plover.*

Her Majesty's ship *Amphitrite*, Captain Frederick, with stores and provisions for the *Plover*, sailed from Callao on the 7th of April, for the Sandwich Islands, *en route* for Behrings Straits. Commander Maguire and the officers appointed to the *Plover*, will join the *Amphitrite* on her arrival at the Sandwich Islands. It is with no little interest that we shall await tidings from the western division of the search, and particularly as they will contain accounts ofthe proceedings of Captains Collinson and M'Clure, the latter of whom has now been two years in the ice, and if unable to advance to the eastward, may probably fall back upon the *Plover*. The *Amphitrite* we presume, may be expected at San Francisco about October, and the intelligence reach England in December. We should not, however, be surprised to find that in the spring of this year some parties have been detached from Captain Collinson's ship, and communicated with the Hudson's Bay settlements on the Peel River or Mackenzie, in which case we should hope in August to get some tidings. Captain M'Clure will probably have got further to the northward during his two years absence in these regions.

Local Attraction in Ships.

The following important communication has been made to us on this subject:—

Extract of a letter received from Captain James Hamlin, of the iron ship *Thomas Hamlin*, arrived at Aden under date 26th of April, 1852.

"We rounded the Cape of Good Hope 8th March. The compasses have almost put me mad, but I am now getting used to it. Off the Cape they were *only six points out*, and this not on one point only, but varying greatly at

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different points, and also on the same points in different localities; so that from time to time, after labouring with azimuths and amplitudes to get a scale of errors made. I have had my pains for nothing, and had to begin again. And now it is my daily task.

Greenock, 22nd May, 1852.

My Lords,—I make no apology for intruding myself on you with the above extract, as it so fully corroborates the statements made by the survivors from the late melancholy wreck of H.M. Frigate *Birkenhead*, and those of the commander of the S. S. *Propontis*.

I am, &c., &c.,

The Lords Commissioners of H. M. Navy. Thos. Hamlin.

The foregoing is a very important communication, not as regards the unfortunate *Birkenhead*; for whatever may be said as to her compasses, (and which have been alluded to in the House of Commons,) the course she was steering was a most incautious one, and sufficiently accounted for her loss; but as affecting the subject of the local influence on the compass. In our last number we inserted a letter on the same subject from Lieutenant Sainthill, whose son was in a ship where it was similarly affected. And we still insist in advising the commanders of our merchant shipping to find the amount of deviation of their compass, and not to trust to correcting magnets, which cannot have the same effect in all latitudes.

New Books.

A Journey to the Tea Countries of China, *including Sunglo, and the Bohea Hills, with a short account of the East India Company's Tea Plantation in the Himalaya Mountains. By Robert Fortune, Author of Three Years' Wanderings in China.—With Maps and Illustrations.*—Murray.

The present generation may perhaps be permitted to despise the wisdom of their ancestors on the subject of geography. But a perusal of Purchas's Pilgrims, written more than 200 years ago, may leave us in doubt, whether, with all our advantages, our knowledge of the interior of China has much increased since the days of the Jesuits. For instance, it was only last year, after much trouble and expense, that the remnant of a race of Jews was discovered whose existence was doubted by many, but whom, we are informed by this quaint old writer,

"Consisted in Caisamsee of ten or twelve families of Iraelites, who had a Faire Synagogue, which had lately cost them ten thousand crowns; therein the Pentateuch in rolls, which had beene, with greate veneration, preserved five or six hundred yeeres."

Through the exertions of two Chinese Protestant converts, this remnant was at length found; it was in the last stage of destitution The Fair Synagogue was a heap of ruins, and the precious rolls, which had lain useless nearly a century, for want of a Rabbi to expound their contents, were purchased with little difficulty for the Bishop of Victoria, and are now on their way to England.

That we should still know so little of China, is, however, not at all extraordinary. Beyond the dealings between our merchants, and an infinitely small fraction of its immense population, there is a great gulf fixed. We are not permitted to penetrate into the interior; nor is it any satisfaction to reflect that the line is drawn by ourselves—that by the treaty of Nankin we deliberately shut ourselves out from the advantage of personal intercourse with 300 millions of people—an intercourse that must have eventually awakened between two

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races of human beings, sympathies which at present have no existence. But this is impossible; our government is pledged not to permit any of its subjects to wander beyond a certain distance from the five ports, to which, by the above mentioned treaty, the trade is confined; and officials are appointed to visit with fine and imprisonment, any one venturous enough to infringe this regulation.

To those of our countrymen who thus risk their liberty in attempts to disclose the hidden treasures of this vast empire, our thanks are justly due, and no one deserves them more than Mr. Fortune. There are few works upon China, among the many which of late years have issued from the press, that have a higher claim to our attention than his unpretending volume; for independent of the restrictions above alluded to, the undertaking of which it gives us the details, was most hazardous; the risks incurred by it can be scarcely appreciated in this country, where all classes move about without let or hindrance, and where no spy or police officer dogs the traveller for political purposes. In China matters of this kind are very different. There, the habits as well as the minds of the people are in every sense of the word stationary. Few Chinese, excepting government officials, travel; and the appearance of a strange chair in a village, is in consequence viewed with suspicion. Our author felt the effects of this, but as he was permitted to pass on, although recognized as a foreigner, in spite of his Chinese costume, we may venture to hope he will not be the last Englishman that will visit the Bohea Hills. Already the fruits of his enterprise in another direction have been reaped, with what benefit to the foreign community the following extract from the volume will show.

"This route (between Ningpo and Shanghae) which I opened some years ago, is now commonly used by foreigners, travelling between the two Northern Ports; and although not provided for by the "Treaty" is not objected to by the Chinese authorities.

"The Consuls of different nations, and their families, merchants, and missionaries, all avail themselves of it; and when we consider the number of foreigners in Shanghae, an outlet such as this seems absolutely necessary. All acknowledge the powerful influence of change of air in cases of fever, and I have no doubt that the lives of some have been saved by being able to get down quickly to the Islands in the Chusan Archipelago. But had there been no route viâ Chapoo, this would oftentimes have been very difficult, as the only other way is by sea. While I mention this to show the folly of the treaty we made with the Chinese—a treaty, by the by, which is observed neither by the Chinese nor by ourselves—it also shows how much may be done by quietly and peaceably breaking down those barriers which have been erected by prejudice and ignorance. pp. 119, 20."

With these remarks we most cordially agree, as well as with those at p. 44, and devoutly hope "that the day is not very far distant, when we shall be allowed to trade and travel in China as in other countries—when all those foolish regulations regarding boundary lines will be swept away."

Our space warns us to conclude this brief notice of a book which we heartily recommend to the perusal of all our brother officers.

STRAY LEAVES FROM AN ARCTIC JOURNAL, *or Eighteen Months in the Polar Regions in search of Sir John Franklin's Expedition, in the years* 1850-1. *By Lieutenant Sherard Osborn, Commander H. M. steamer Pioneer.*

THIS is a creditable work by a distinguished young officer of the present day. It is a simple narrative of facts connected with the government expedition, under Captain Austin and Captain Penny, in which all controversy or allusion to their unhappy differences has been judiciously avoided. It is impossible not to be struck with the good feeling and tone throughout; and the just

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credit given by Lieutenant Osborn to Captain Penny for his zealous exertions in forwarding the object of the expedition in which he was embarked.

Lieutenant Osborn's Journal will well repay the perusal of its "Stray Leaves." They will be found to contain many judicious remarks, many interesting anecdotes, told with much *naiveté*, and many observations on the general features of the Arctic Regions, and on the habits and character of the Esquimaux there located.

The following extract will convey a good idea of the author's free and easy style.

"Fancy the lower deck and cabins of a ship lighted entirely by candles and oil lamps; every aperture by which external air could enter, unless under control, carefully secured, and all doors doubled, to prevent draughts. It is breakfast time, and reeking hot cocoa from every mess table is sending up a dense vapour, which in addition to the breath of so many souls, fills the space between decks with mist and fog. Should you go on deck (and remember you go from 50° above zero to 40° degrees below it, in eight short steps) a column of smoke will be seen rising through certain apertures called ventilators, whilst others are supplying a current of pure air. Breakfast done—and, from the jokes and merriment, it has been a good one—there is a general pulling on of warm clothing, and the major part of the officers and men go on deck. A few remain, to clean and clear up, arrange for the dinner, and remove any damp or ice that may have formed in holes or corners during the sleeping hours. This done, a muster of all hands, called 'divisions,' took place. Officers inspected the men, and every part of the ship, to see that both were clean, and then they dispersed to their several duties, which at this severe season were very light; indeed confined mainly to supply the cook with snow to melt for water, keeping the fire-hole in the floe open, and sweeping the decks. Knots of two or three would, if there was not a strong gale blowing, be seen taking exercise at a distance from the vessels; and others, strolling under the lee, discussed the past and prophesied as to the future. At noon, soups, preserved meats, or salt horse, formed the seamen's dinner, with the addition of preserved potatoes, a treat which the gallant fellows duly appreciated. The officers dined somewhat later—2 p.m. A little afternoon exercise was then taken, and the evening meal, of tea, next partaken of. If it was school night, the voluntary pupils went to their tasks, the masters to their posts; reading men producing their books, writing men their desks, artists painted by candle-light, and cards, chess, or drafts, combined with conversation, and an evening's glass of grog, and a cigar or a pipe, served to bring round bed-time again."

PRACTICAL ILLUSTRATIONS *of the Necessity for Ascertaining the Deviation of the Compass—with explanatory diagrams, &c. By Captain E. J. Johnson, R. N., F.R. S.*—Potter, Poultry. 2 vols.

THE "Deviation" of the Compass, as we have recently observed, is forcing itself into notice, thanks to the iron vessels and iron machinery, &c. We have here some practical illustrations of its effects in Her Majesty's ships. These although they may not be so troublesome as those of the *Keera*, mentioned in our last number, or those of the *Thomas Hamlin* in our present one, are indeed bad enough. But the subject is in good hands as far as concerns our men of war: they are well looked after by Captain Johnson. And we recommend our iron ship-owners to do the same. If they are not contented with the fearful accounts of compass misbehaviour to which we have just alluded, they will find more proof in Captain Johnson's book, that the sooner they take the subject in hand the better, and oblige their officers to make a proper allowance for it if they expect to make good passages, or to save them from wreck.

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SANDWICH ISLANDS.—It appears there was a great excitement in Honolulu, caused by a report that the part of the garrison of the Chilian colony in the Straits of Magellan which murdered their officers, were cruising in the Pacific as pirates in the American vessels which they had seized and plundered. The following letter was accordingly addressed to Capt. Gardner, of the Vandalia:—

DEPARTMENT OF FOREIGN RELATIONS.

Honolulu, 27th March, 1852.

SIR,—Under a sense of duty to the safety of American and other property now afloat in the harbour, I respectfully request your attention to an extra of *The Polynesian*, which will be out this morning, showing that part of the garrison of the Chilian colony in the Straits of Magellan, after murdering their officers, and a clergyman, are now cruising as pirates in the Pacific, on board of two American vessels which they had seized and plundered.

After considering the warning kindly given by the Government of Chili, it will be for you to decide whether or not you will leave this harbour before the arrival of the U.S. ship St. Mary's.

With the highest respect and consideration, I have the honour to be, Sir, your most obedient, humble servant,

To Capt. W. H. Gardner, (Signed) R. C. WYLLIE.
U.S. Vandalia, in the port of Honolulu.

Captain Gardner replied that he would remain until the St. Mary's arrived, and in the mean time Lieutenant Reed of the Vandalia, drilled the troops to the garrison. In return, the government remitted all port dues of every kind, thanked Captain Gardner by resolution, and presented him with 200 dollars to be distributed among the crew. The money was respectfully declined, because it could not legally be accepted, and the government gave it to the American Seamen's Friend Society.

EXPERIMENTS WITH ANCHORS.—The necessary preparations for the trial of anchors are now completed in the parade ground of the dockyard. Up to the present time nine anchors have already arrived to undergo the various tests determined on by the Committee of Management. Mr. Honibal, the purchaser of Porter's patent, has sent one; Lieutenant Rogers, two, manufactured by Brown and Lennox; Mr. Trotman, of London, one, manufactured at Liverpool; Messrs. W. Mitcheson and Sons, of Limehouse Hole, and Messrs. Orgood and Field, of Lime-street, City, London, each one; Mr. Isaacs, of America, one, manufactured at Liverpool; J. Aylen, Esq., Master Attendant, one, invented by and manufactured under his immediate inspection. With these will be tried the Admiralty anchor. The following officers and gentlemen comprise the committee—Captain the Hon. Montagu Stopford, of the *Waterloo*; Captain C. Hope, Superintendent of the Dock Yard; J. Tonkin, Esq., master of the *Waterloo*; J. Aylen, Esq., Master Attendant; Messrs. Marshall, Dunbar and Lindsay, shipowners; Mr. W. Phillips, and Mr. W. Drew.

WEST HARTLEPOOL.—The 1st of June, was "made glorious" at West Hartlepool, by the public inauguration of the extensive New Dock at this rapidly-increasing port, near the south-eastern extremsiy of the county of Durham. No port in the kingdom, we believe, has advanced so rapidly as West Hartlepool; and it owes its unprecedented progress in an eminent degree to the spirit, enterprise, aud perseverance of R. W. Jackson, Esq., the respected and able chairman of the Dock and Harbour Company, and of the Stockton and Hartlepool RailwayCompany. The harbour and dock accommodation at West Hartlepool now amounts to 66 acres; and such is the prospect of increased traffic to and from the port, that it is in contemplation to even make more new docks, and to effect other improvements that may make the Bay of Hartlepool a complete harbour of refuge on the north-east coast. Quoting from a public an-

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nouncement before us, we may add "a most direct and convenient line of railway communication is completed by the Leeds Northern Railway between the West Harbour and Docks and Leeds, and Leeds, Bradford, Huddersfield, Manchester, and all the manufacturing towns of the West Riding of Yorkshire and South Lancashire—making the distance to Leeds 72 miles from the West Harbour and Docks, which are situated on the open sea, and have no river navigation. Powerful steam-boats for passengers, merchandise, and cattle, in communication, with Leeds, Manchester, and the manufacturing districts of England, will sail weekly each way between West Hartlepool and Hamburgh Rotterdam, Antwerp, and Scotland.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory.
From the 21st of May to the 20th of June, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter.		Strength.		Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M	P.M	A.M.	P.M.
		In. Dec.	In. Dec.	o	o	o	o	N	N				
21	F.	30·02	30·00	50	55	48	56	NE	NE	2	4	o	o
22	S.	30·04	30 05	53	57	47	59	NE	NE	2	2	o	o
23	Su.	30·08	30·06	50	56	48	58	NE	NE	2	2	o	o
24	M.	30 04	30·02	48	62	44	64	NE	NE	3	3	o	bc
25	Tu.	29·98	29·95	56	58	49	62	NE	NE	4	4	o	o
26	W.	29·80	29·80	50	50	49	51	NE	NE	6	2	q or 1) (2)	or (2)
27	Th.	29·92	29 92	50	53	48	54	NE	NE	2	2	o	o
28	F.	29··6	29·82	52	54	46	56	NE	NE	1	1	o	o
29	S.	29·71	29·67	47	47	46	48	NE	NE	4	2	or (2)	or (3)
30	Su.	29·74	29·75	46	54	39	55	N	NW	4	2	be	bep (3)
31	M.	29·82	29·82	53	56	41	57	N	NW	2	3	o	bc
1	Tu.	29·87	29·89	53	61	41	62	W	W	2	4	bc	beprh 3)
2	W.	29·89	29·85	58	62	49	63	SW	SW	5	6	qbc	qbc
3	Th.	29·75	29·81	56	57	50	62	SW	SW	4	4	bcp (2	bcp (3)
4	F.	29 76	29·80	57	63	46	64	SW	W	2	2	bc	bc
5	S.	29·98	29·99	58	66	45	67	SW	S	2	3	bc	bcp (4
6	Su.	29·86	29·83	59	66	53	67	SE	S	2	2	o	bc
7	M.	29·62	29·58	58	62	54	64	SE	E	1	4	or (2)	or (3) (4)
8	Tu.	29·63	29·64	58	64	52	66	SE	SE	1	1	o	odf
9	W.	29 60	29·58	58	58	54	60	SW	SW	1	1	or (1) (2)	og (3) (4)
10	Th.	29·56	29·58	50	52	49	53	NW	NW	2	2	or (1) (2)	or (3)
11	F.	29·51	29·53	52	54	44	56	W	NW	2	4	op (2)	o
12	S.	29·66	29·70	50	56	43	57	W	W	2	2	o	or 4)
13	Su	29·80	29·60	55	59	45	61	W	W	3	3	be	or 4)
14	M.	29·26	29·25	58	61	48	62	W	W	3	5	bcp (2	qbctp (2
15	Tu.	29·52	29·56	60	62	48	64	SW	SW	3	3	bcp 2)	bcp (3)
16	W.	29·38	29·38	58	63	50	64	S	S	4	6	bcd 2)	qbcp 4)
17	Th.	29·56	29·56	58	64	51	65	S	S	4	6	bc	qbcp (4)
18	F.	29 58	29·62	59	61	50	62	SW	S	3	5	bc	qbc
19	S.	29·62	29·68	59	65	51	67	SW	W	2	3	bcp (1)	bctlp 3)
20	Su.	29·86	29 82	57	65	50	66	W	S	1	4	o	or 3) (4

May, 1852.—Mean height of the barometer = 29·936 inches; mean temperature = 51·9 degrees; dept of rain fallen = 1·86 inches.

TO CORRESPONDENTS.

We have received MR. TAYLOR'S communication on the latitude by two stars, a subject which we believe wastreated on by Commander Shadwell, now in the *Sphynx*, long ago, and noticed in a former volume of this work.

We have also received CAPT. SEDGWICK'S letter, but too late for noticing in our present number.

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THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

AUGUST, 1852.

Voyage of H.M.S. "Calypso," Captain Worth, to the Pacific.

[Captain Henry J. Worth, entered the Navy, 22nd January, 1813, as First Class Volunteer on board the *Bulwark*, 74, commanded by his father, as Flag Captain to Rear Admiral Philip Chas. Durham, off Rochefort. Towards the close of the same year he sailed with those Officers for the West Indies, as Midshipman in the *Venerable*, 74. During the passage he was afforded an opportunity of assisting at the capture, 16th and 20th January, 1814, with but trifling loss to the British, of the French 40-gun frigates *Iphigénie* and *Alcmène*. He returned to England with Captain Worth in 1814, in the *Palma*, 38; and was employed next, in the Channel, on the coast of Ireland, and in the East Indies, in the *Impregnable*, 104, Captain Jas. Nash, *Spencer*, 74, Captain Wm. Broughton, *Erne*, 20, Captain Timothy Scriven, *Windsor Castle*, 74, Captains Thos. Gordon Caulfield and Sir Chas. Dashwood, *Liffey*, 50, Commodore Chas. Grant, and *Asia*, 84, Captain Mark John Currie. On the paying off of the *Asia*, in which ship, and the *Liffey*, he had been acting as Lieutenant, he was presented with a commission, bearing date 20th August, 1824. His succeeding appointments were—18th January, 1825, to the *Genoa*, 74, Captains Wm. Cumberland and Walter Bathurst, employed in the Channel and on the coast of Portugal; 20th December, 1827 (a few weeks after he had left the *Genoa*), again to the *Windsor Castle*, Captain Edward Durnford King, lying at Plymouth; 1st November,

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1828, to the *Warspite*, 76, Captain Wm. Parker, also at Plymouth; 22nd January, 1829, to the *Kent*, 78, Captains John Ferris Devonshire and Samuel Pym, in which ship he returned to the Mediterranean; 29th July, 1831, as Senior, to the *Rapid*, 10, Captain Charles Henry Swinburne, on the latter station, whence he came home and was paid off in July 1833; 11th December, 1833, in a similar capacity to the *Endymion*, 50, Captain Sir Samuel Roberts, under whom he was afresh, for nearly three years, employed in the Mediterranean and off Lisbon; and 26th November, 1836, again as First, to the *Stag*, 46, Captain Thomas Ball Sulivan, fitting for South America. He was promoted to the rank of Commander, 10th January, 1837; and on 1st February, 1838, he was appointed, in that capacity, to the *Hastings*, 72, Captains Francis Erskine Loch and John Lawrence. Under Captain Loch he escorted the Earl of Durham to Quebec, and the Queen Dowager to and from the island of Malta; and under Captain Lawrence he took an active part in the operations of 1840 on the coast of Syria. In command of the boats of his own ship, and of the *Edinburgh*, 72, he led a gallant and hazardous attack upon the castle and magazine at Beyrout, and succeeded in destroying a train which had been laid to the latter for the purpose of exploding it on the landing of the British. He afterwards, having handsomely volunteered his services, united in a second attack made by the boats of the same ships, under the orders of Commander Francis Decimus Hastings, of the *Edinburgh;* and on this occasion he received a severe contusion. As a reward for his conduct he was promoted to the rank he now holds, 5th November, 1840. He left the *Hastings* in the following January; and had been in command, since 12th December, 1845, of the *Calypso*, 18, in the Pacific; which ship he paid off at Chatham, last year. On this occasion he suffered some very severe illness, from a return of which he died, at Englefield Green, on the 27th of June, at the early age of fifty-one. The following observations made by him while he had the *Calypso*, will be useful to ships bound to the Pacific.]

Having sailed from Plymouth, on the evening of the 18th March, 1846, with the wind from the northward and westward, attended with squalls, hail, and thick weather, ther. 38°, made the Lizard on the following night at 11h. P.M., when the wind drew more to the westward, and increased to a gale, with a heavy sea, which lasted with little intermission until the 28th, when the wind shifted to the northward and eastward.

On the 29th the wind again shifted to the southward and westward, and so continued (with the exception of a few hours when it blew from the northward) until the 11th April; when, failing in the object of reaching Madeira, from the succession of bad weather and westerly winds, anchored off Santa Cruz, Teneriffe, in 34 fathoms, black mud and sand.

On the evening of the 14th April, having set up the lower-rigging and completed water, sailed from Teneriffe, with a fine trade-wind,

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communicated with H.M.S. *Scout* a short time after leaving the anchorage, and found that she had sailed from Plymouth ten days later than the *Calypso*, and had experienced even worse weather, with the same continuance of westerly winds. Made the west point of St. Antonio (Cape de Verds) on the morning of the 20th, and shaped a course for 18° on the line, losing the N.E. trade-wind on the 25th, in lat. 5° N., and meeting the S.E. trade on the 2nd May, in lat. 1° 5′ S., the interval being a succession of calms, light airs, and squalls of rain. On the 10th, being then in lat. 19° S., the wind drew more easterly, and finally to the westward and southward; from which points it continued till the 13th, when, after a calm of thirty-six hours, it sprung up from the southward and eastward, which enabled the ship to reach Cape Frio on the 18th. Anchored off the castle of Santa Cruz, Rio de Janeiro, on the evening of the same day, in 7¼ fathoms, fine sand, Sugar-loaf bearing N.W.b.W., Raza, S.¼W., Santa Cruz, N.¼W.; in consequence of having anchored too close to the bar the ship rolled considerably.

Whilst at Rio we experienced, generally speaking, fine weather; though at times violent rain accompanied by thunder and lightning intervened.

Sailed from Rio on the morning of the 28th May, with a fine N.E. wind, which, however, only lasted until the 30th, when it veered round to S.W., and afterwards to a strong gale, attended with violent squalls. The barometer rose from 29·99 to 30·38 during this gale (Pampero) which lasted till the 4th June, when the wind drew round by S. to S.E., and on the 6th, to the E. and N.E., the barometer rising to 30·50.

On the 7th, in lat. 40° 29′ S., long. 47° 7′ W., the wind changed to W.N.W., with occasional rain attended with mist and very thick fog at times, the barometer gradually falling to 30·18. From the 7th to the 10th, the wind continued moderate, from W. to S.W., with occasional squalls and thick cloudy weather, barometer averaging 30·35. On the 12th, a strong breeze from north, with thick fog and rain, barometer falling to 29·90. On the 13th and 14th, wind shifted to W. and S.W., moderate but with the same thick misty weather; passed to the eastward of the Falklands, but could not sight them; it being originally intended to pass to the westward of them, had the wind and weather permitted.

On the 15th the weather still continuing very thick, cold, and with extremely dense fog, the wind changed from N. to N.W., and increased to a gale, the water being tolerably smooth; this gale took the ship within 180 miles of Diego Ramerez Islands by noon on the 16th, when it veered round to W., and continued to blow exceedingly strong, with a high sea accompanied with heavy squalls, rain, and snow; barometer fell from 30·07 to 29·65, thermometer 45°; the ship standing to the southward. On the 18th, the wind shifted to S.S.W., being then in lat. 58° 11′ S., long. 65° 41′ W., the wind moderating for a few hours, when it again increased to a strong gale, with squalls, sleet, and rain,

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barometer rose to 29·70, and again fell to 29·35, as the wind drew to the westward.

On the 20th and 21st, a light breeze from S.S.E., barometer, 29·60, thermometer, 30° and during the night 27°; the weather being clear but extremely cold, the ship, guns, and ropes being coated with thick ice. On the 21st, the wind shifted to N.W., and increased to a strong gale, with thick fog, sleet, and rain, and so continued till noon on the 24th, when it moderated, barometer falling, 29·07. From the 24th to the 26th, the wind varied between N.W. and W.S.W., but rose again on the following day to a strong gale, with fog and severe squalls; barometer, 29·94.

On the 28th, the wind gradually fell until almost a calm, with drizling rain, and fog, barometer fell to 29·27. On the 29th, a light breeze sprung up from N.E., which veered round to E., and shifted on the following day to S., blowing a gale, with dark cloudy weather; barometer falling to 28·98, lat. 58° 18′ S., long. 83° 37′ W.

On the 1st July, a fresh gale from W., attended with misty, rainy weather; between the 1st and 7th, the wind was more moderate, and principally from the westward.

On the 8th and 9th, the wind shifted to the E.N.E., and blew a fresh gale, with hard squalls, and passing showers of sleet and rain, which took the ship to lat. 38° S.

After passing the parallel of 40° S., steered for Valparaiso, expecting to meet the usual leading winds from S. to W.; but, in lat. 38° 20′, we encountered a very strong gale from N., with an exceedingly high sea, which lasted till the 12th, when it moderated, but continued in the same quarter till the 14th, when it changed to S., with fine weather. Made Valparaiso Light a little before daylight on the 17th, and anchored at 3h. P.M., in 25 fathoms, the passage from Rio Janeiro having occupied forty-nine days.

During this passage the lowest latitude reached was 60° 38′ S., being then in long. 74° 45′ W., the greatest west longitude 84° 37′, having been thirteen days working to the westward—before putting her head to the northward. The lowest range of the thermometer was 28° and the lowest meridian altitude, 6° 30′, the shortest day being seven hours.

The greatest disadvantage of a winter's passage round the Horn is the very low altitude of the sun, and consequent short days, which prevents much sail being carried, as from the extreme cold, and stiffness of the ropes and canvas, shortening sail at night, in the violent squalls which frequently occur, is both difficult and dangerous; had we been fortunate enough to have had a good moon when off the Cape, of course this difficulty would have been much lessened.

It was observed that the barometer invariably rose with a gale, and fell as the wind moderated, and that it always stood highest when the wind was from the northward and westward.

Having met a few weeks after at Callao, the English barque *La Bonne Mère*, from Cardiff, laden with coals—out 128 days; found she

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had in the month of July, when in lat. 59° 19′ S., long. 54° 0′ W., been entangled for fourteen days with large fields of ice, from which she had suffered considerably in the sheathing and copper of her sides and bottom.

A few days after the ship's arrival at Valparaiso, two violent gales were experienced (northers) accompanied with heavy rain and considerable sea; during the height of the second gale a large foreign merchant ship arrived and anchored in our hawse, and drove till close to us—although we veered as much cable as possible—and caused much uneasiness during the night.

There appears but little danger to be apprehended if a ship's ground tackle be good, and she has a sufficiently outside berth to avoid being fouled by ship's at anchor in the bay, which is often crowded, and with little or no attention paid as to their situation, or method of mooring; the offset in this bay, being very strong, relieves vessels from much of the strain on their cables.

Sailed from Valparaiso, for Callao, on the 25th July, and after a fine weather passage of nine days, and experiencing the usual southerly winds, arrived on the 3rd August.

Callao at this season of the year is subjected to heavy fogs in the morning, but which usually clear away between ten and twelve o'clock in the forenoon; as the season advances (towards the latter end of November) these fogs disappear.

The number of English shipping frequenting this anchorage has largely increased of late, in consequence of the great quantity of guano shipped at the Chincha Islands for England; indeed the trade of Peru generally has considerably extended of late years.

Nothing can be finer or more safe than the anchorage in this extensive bay, the only shoal to be avoided being the spit which runs out from Callao beach, and which forms the south part of the bay; this, however, so completely shows itself that no vessel, but from the greatest carelessness, could be endangered by it; a part of the spit—the whale's back—dries at half tide.

The south-western side of the bay is formed by the island of San Lorenzo, six miles west of Callao, on which is a convict establishment. There being very good anchorage off this island, in 6 to 8 fathoms, the shore being bold, and the bottom clear, it is very convenient for men-of-war to practice firing at targets erected on shore, and thereby saving their shot; as also for landing marines, small arm men, &c., for exercising, permission having first to be obtained from the government authorities. We took advantage of this and had some very good practice, as also some excellent seine fishing, fish being very plentiful in every part of the bay.

On the 21st November we got underway and sailed out to the Formigas rocks, for the purpose of exercising; and on the 22nd stood in for the back of the islands of San Lorenzo and Frontera, running down outside the rocks Los Palominos, carrying 18 fathoms water, which depth we likewise found at nearly a mile outside San Lorenzo; on these rocks we landed a party of officers and men, to shoot sea lions, which frequent them in great numbers.

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On the 16th December sailed from Callao for Puntas Arenas, in the Gulf of Nicoya, Central America, and steered to pass midway between the Galapagos and the mainland, in order to avoid the frequent calms which prevail in the vicinity of those Islands.

The S.E. trade wind carried the ship past the line, which was crossed in 85° W. long., having found a westerly and north-westerly current averaging eighteen miles daily. When past the line steered for the island of Cocos, principally with the view of avoiding the indraft of the Gulf of Panama, as also the unsettled weather which more or less prevails in it; the island was sighted on the 26th, the current having gradually decreased on advancing to the northward.

Cocos is high, and luxuriantly wooded from the summit to the edge of the cliffs, and has several detached rocky islets also thickly wooded, several streams of water were likewise observed falling down its south side. The island is highest at its S.W. end, and is situate N.E. and S.W., and is about four miles in length, having two small islands off its N.E. end, and two smaller ones off its S.W. end.

By the chronometers, which were going very well, we made the long. of Cocos to be 87° 7′ W., which agrees nearly with the general chart issued by the Admiralty, but differing from Norie's chart thirty-seven miles, it being laid down therein 86° 30′ W., and Raper's Navigation 87° 00′.

Having passed close to Cocos, shaped a course for Cape Blanco, Gulf of Nicoya, which was made on the 29th, bearing N.E.b.N., about thirty miles, the current having set the ship twenty miles daily to the northward and eastward. There being a good moon we stood in for the land, and on the 30th, found the current had changed and set the ship to the northward and westward; and having at the same time light winds, we were delayed rounding the Cape till the morning of the 31st, and, sailing up the Gulf, anchored off Puntas Arenas, at midnight, in 5¼ fathoms, about four miles from the beach.

From Cocos till making the land about Cape Blanco, the wind continued about W.S.W., when it became variable and from the eastward.

Cape Blanco, when made from the westward, is moderately high, sloping down to the sea, and well covered with wood; the land to the northward and the westward being well covered and wooded down to the beach, and having a range of hills behind. About half a mile to the southward of Cape Blanco is a small white rocky island, the sea breaking nearly across from it to the Cape. In making the Cape from the eastward this rock has the appearance of a white cliff, or patch attached to the Cape.

On the east side, Cape Blanco is high, with several small white patches, and is not so thickly wooded as on the west side.

	° ′		° ′
By mean of chronometers, Cape Blanco was found to be in long.	85 10 W.	lat. by mer. alt.	9 32 N.
Admiralty Chart	85 5		9 34
Norie's Chart	84 45		9 30
Raper's Navigation	84 42		9 30

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The Gulf of Nicoya is free from all dangers; there are several islands running out from the western side of the gulf, these must be left to the westward sailing up. Off the easternmost of these islands, and about one mile distant, is a moderately high rock (Sail rock) which should not be approached nearer than one mile; a N.E.b.N. course from Cape Blanco takes a ship to the eastward of it.

The western side of the gulf has foul bottom, and deep water; the eastern side has much clearer bottom, and shoaler water; which enables a ship to anchor on that side when prevented by winds, or light breezes, from passing Sail rock. On passing Sail rock a fine and extensive circular harbour will be opened with several islands in it, the largest and most remarkable of which (English island) appears to stand about the middle of the top of the harbour, and on with it will be seen the conical island of Azucar; a vessel should steer for it, taking care not to approach Bird Island (which is the next southernmost) nearer than two miles, as a reef runs out from it to the eastward, Rover's shoal, on which H.M. sloop *Rover* grounded.

On approaching Puntas Arenas, the low sandy spit on which the town, or rather village, is situate, will be observed to the eastward of English Island; steer towards it, and when the custom house (which has a flag-staff close to it, and is the westernmost house on the spit) is seen bring it to bear N.W.¼W., and anchor in 5¼ fathoms, one mile from the beach.

Between the spit and English Island is a very extensive sand-bank, which is dry at half-tide, and has three fathoms close to the breakers. The flood tide sets round the eastern shore towards this shoal, passing between it and English Island, the ebb running in an exactly contrary direction, its strength being nearly three knots at the full and change of the moon, when it is high water at 2h. 45m. P.M.

The soundings from abreast the island of Negritos, in 22 fathoms, are regular, and gradually decrease till within three or four miles of the beach when it deepens, for a short time, from 5 fathoms to 6¼ and 7 fathoms, and then decreases again to 5¼ fathoms—which soundings will be carried to within one mile of the beach.

In working out of the gulf, the soundings are found to deepen from the fairway, when standing towards the eastern shore, which is the preferable side, as the ebb tide sets along it, it is however advisable not to start till the land breeze has commenced, which seldom fails to blow, and is at times very strong.

In sailing up the gulf at night it is also advisable to keep the eastern shore on board, as the land wind leads nearly, if not quite, up to the anchorage.

The gulf of Nicoya extends above English Island, in a northerly and westerly direction, thirty miles, and contains several islands, but the water is shoal.

Water can be obtained at English Island, but is of bad quality, and also at the town, from wells, which is better, but to fill any quantity would be attended with much inconvenience, and loss of time, and the charges being moreover extremely high—two dollars per ton. If

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desired, water can be supplied at this price by the natives, in their canoes, using the ship's casks.

Beef is plentiful, of fair quality, and supplied at 2d. and 2½d, per lb. Vegetables are scarce, with the exception of plaintains. All stock—such as pigs, poultry, eggs, &c.—is cheap and plentiful, if sufficient time be given for the natives to bring it from the surrounding villages. Game is plentiful, particularly deer and wild turkeys; pigs and firewood are also plentiful and cheap.

The town of Puntas Arenas is small, containing about 1000 inhabitants, amongst whom are two or three English, and several European residents: an extensive river flows by it, which is navigable for many miles by boats at high water, and has a depth of nine feet at low in the channel, within two or three hundred yards of the town; small vessels usually anchor in the river to discharge their cargoes, and load coffee, which is exported in great quantities, and is of very fine quality.

Note.—In making a passage from the south to the Gulf of Nicoya, it is desirable to make the eastern land, or at all events to make Cape Blanco well to the westward of the ship.

Between Callao and Puntas Arenas the barometer ranged from 30·00 to 30·20; the thermometer was at 80° on the line, and whilst at Puntas Arenas it averaged 86°, the sun being very powerful.

Sailed from Puntas Arenas on the 7th January, 1847, with a faint sea breeze and the ebb tide, anticipating the land wind, in which, however, we were deceived, as it fell nearly calm, the tide taking the ship to the Sail rock by one in the morning; we lay between it and the eastern shore until daylight, drifting about; when the land wind came down with great force, and took us round Cape Blanco; it continued strong all day, and in the evening increased to a moderate gale as we opened the Papagayo Gulf.

The breeze out of Papagayo is always strong, is felt 40 or 50 miles off shore, strongest nearest the land. Coming from Puntas Arenas—although this breeze does not usually allow a ship to lay up for Realejo at first, it will as you proceed northward draw more off shore, and lead directly up for El Viejo mountain, the leading mark for Realejo. El Viejo is an extinct volcano, and a remarkable landmark; being the westernmost of several which are conical—one of which, Momotombo, is an active volcano, and almost constantly smoking, and having the appearance of a slice cut off its top, slanting to the eastward. Westward of El Viejo the land is low, with a sandy beach, thickly covered with small wood; in very clear weather, approaching El Viejo from the southward, you will see the volcano of San Miguel (extinct) making like a round island to the westward.

Having made out El Viejo, a N.E.b.N. course leads directly up to the anchorage off the entrance of Realejo Harbour; seven or eight miles from the beach is 19 fathoms water, shallowing quickly but regularly to 12 fathoms at about four or five miles from shore. The land to the westward is a continuous low beach, wooded close down; carrying the eye along this beach to the eastward will be observed a

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break, the land protruding further into the sea, the beach whiter, and the surf heavier, having detached trees upon it, with low abrupt cliffs, also an opening, which is the south entrance into Realejo. The land to the westward of this opening (Castanon Island) has few trees upon it, and is abrupt at the west end; to the westward of it is Cardon Island, which has many detached trees on its west end, of larger size than on the apparent main land, (Island Aceradores,) and is higher and more abrupt at this end than Castanon; there is also a large green tree jutting out from it to the westward, and a high rock close to it, which can be seen as soon as the island itself. The face of Cardon Island is a reddish brown colour, occasioned by burning the bamboo, which grows thickly upon it. Having made out Cardon Island, the best anchorage is with its west end bearing east one and a quarter mile off, El Viejo N.E.b.N. in six and a half or seven fathoms, sand and mud. No ship should anchor to the northward of the west end of Cardon bearing E.b.S., as the soundings shoal very quickly from six to five and four and a half fathoms, the rise being about 11 feet, and always a swell, sometimes very heavy, the ship rolling deeply, nor is the bottom so good when nearer the beach.

At the commencement of the dry season the land winds frequently last for several days together, blowing very fresh, and preventing ships from entering the harbour; but as the season advances the land and sea breezes become more regular, but never strictly so. Sir E. Belcher's plan of Realejo is very correct, though there did not appear to me to be quite so much water near the east end of the north side of Cardon as laid down in it; the entrance is very narrow, making it necessary to pass quite close to the tree on the west end of Cardon Island. A pilot takes ships in and out, but requires to be watched, as he is not a sailor, and is old and infirm. When leaving the harbour, you should always have a commanding land wind; as the ebb sets directly through the south entrance, and very strong. It is high water at full and change at 3 P.M.

The *Calypso* was awkwardly situated, the land wind failing us we drifted down towards Cardon Island, and we were obliged to anchor and wharp against the tide into deeper water, the anchor was let go in three and three quarters fathoms, but it soon shoaled to less than three fathoms.

The rise and fall here is about eighteen feet.

The proper anchorage, which is nearer the Island of Aceradores than the opposite shore, is confined, the bottom soft mud, consequently should a vessel take the ground, no danger would occur; a large frigate would find considerable difficulty in swinging here.

Realejo is healthy during the dry season—November to April—but subject to fever and ague during the rains, which commence in May. Water can be had, but not very good, and is very dear; the natives fill the casks out of the river at low water a little above Realejo; wood is cheap—four dollars per thousand pieces; fresh beef cheap purchased by the bullock; stock cheap and very good, fowls one and a half reals, sucking pigs two reals, ducks three reals, lard one real per pound, rice

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two dollars a quintal, and vegetables scarce. This is the best place for stock on the whole coast; great advantages are derived from its being the residence of the Vice-Consul, Mr. Foster, whose kindness and attention is very great; washing is also comparatively cheap, one dollar per dozen. Firewood may be cut in any quantity and good.

Leaving Realejo for Conchaga with the land wind, it is advisable to steer obliquely off shore to meet the sea breeze, which takes a ship to Conseguina point, on the east side of the gulf of Conchaga. Sailing in the morning you will generally reach this point late in the evening, or the next day afternoon.

The gulf of Conchaga will be well understood by reference to Sir E. Belcher's plan; there appear to be no dangers. The *Calypso* worked in and out twice, tacking at less than two cables from the shore and islands; the tides are very strong, full three knots at full and change, which takes place at 3h. P.M. About the change of moon the land wind comes off in very heavy squalls, and blows strongly during the night and greater part of the day; you can, however, see it coming by the foam on the water. As in coming from Realejo you generally arrive here in the evening, it is advisable to anchor when the land wind comes off, for should you be driven off the coast, it will take all the next day to reach the islands and to arrive at the proper anchorage, the sea breezes being weak after such strong land winds. In the *Calypso*, on our first going to Conchaga, the land wind came down with such force, that the gulf appeared to break across; we anchored in 18 fathoms, and worked up the next day to Chicarine Bay.

This gulf contains the best and most easily obtained water on the coast; it is a stream running down the mountains clean and sweet into the bay, called La Playita de Chicarine, which is just to the southward of the Playa de Chicarine, the large sandy beach to the southward of Chicarine Point. You can anchor close in. The best way to water is by rafting; the water in the bay being quite still, you can pull well to windward, and alongside in the eddy, and then across the tide to the ship. We filled 26 tons per day, although badly off for boats, having only a 28 foot pinnace. There is a surf on this beach, sometimes heavy, but seldom heavy enough to prevent landing. Merchant vessels anchor so close as to be able to haul their casks off with long lines. When we first anchored in this gulf, we tried, through ignorance, to water in the Playa de Chicaniro; but we found the surf so heavy, the water so bad, and such great difficulty from the tides, that we could not get more than 18 tons in a day, and that after great labour to the men, and much damage to boats and casks. Wood is not so cheap here as at Realejo, beef about the same price, also washing, stock bad and dearer and difficult to get in any quantity, turtle is plentiful, about two reales for one weighing 50 lbs. Sir E. Belcher's plan clearly shows the only dangers in entering the Port La Union; they are visible at low water; the only difficulty is the very great strength of tide; it is quite a sluice round Chicarine Point. H.M. ship *Dublin* lay here for four months.

Between Conchaga and Acajutla the passage is very tedious, being

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never less than two days, and sometimes five and even longer; the land breeze is not to be depended on, and the sea breeze often very light, although at times the sea breeze will blow very fresh indeed. The best plan after leaving Conchaga is to stand rather off shore, so as to make a long leg off with the sea breeze. The coast is quite clear, there being anchorage nearly all along it. We found the sea breeze seldom set in before noon, and often later, and a continual set to the S.E. The leading mark for Acajutla is the Isalco Volcano, which smokes, and frequently sends up large jets of fire. On a N.E.b.N. bearing, it leads to the anchorage of Acajutla. This anchorage is difficult for a stranger to find; the best plan is to take notice of the several volcanoes on the coast after leaving Conchaga; viz.—San Miguel, San Vicente, San Salvador, &c. The land is a low beach, the soundings decreasing gradually to 10 fathoms at three or four miles off shore, until the volcanoes are passed, when it becomes moderately high, and has 25 fathoms at a little distance from the beach, particularly in the bight to the S.E. of Point Remedios, where in that depth the surf can be heard quite distinctly. Point Remedios runs out from this moderately high land, is low and thickly wooded, appears to stretch a long way into the sea, and has several black rocks, one nearly a solid square, lying just off it; these rocks are the inside part of a reef extending three miles in a S.W. direction, on which the sea breaks heavily at times. On the S.E. side of this point the beach is clear, having no rocks upon it; but on the N.E. side it is broken by rocks and clumps of trees, dividing it into a number of small sandy bays. Should you not be close in, you cannot make the point out, as it appears part of the low thickly wooded land that stretches from the before-mentioned moderately high coast to the westward of Istapa. The Volcano of Isalco is decidedly the surest mark if it can be made out; but as it does not smoke constantly, and is situated on the side of and is lower than the mountain behind, (Madre,) it is very difficult to find. The Madre, and mountains to the westward of Isalco, are very high; it may be known by the table-land top, in which it differs from the others, they being conical, or approaching that form. The Isalco is a conical volcano, apparently on the east side of the Madre, and the crater is about one fourth down from the table land: with the sun shining on it in a clear day, it can be made out, and, if smoking, will be easily distinguished; bringing it to bear N.E.b.N. leads directly to the anchorage. Standing in, you will see the houses at Acajutla on the cliff, a flag blue white blue horizontal is hoisted at the custom-house when any vessel approaches. A little distance to the southward, by looking carefully with a glsss, you will observe a dark perpendicular line in the cliff, with a small shed just above it; this mark is a passage cut down through the cliff to the landing place; anchor with it on your port bow in 11 fathoms, sand and mud. Our marks at anchor were Point Remedios S.E., Isalco Volcano N.E.¼N. in 10 fathoms; the landing-place is rather awkward, but with care seldom dangerous; at the bottom of the cut in the cliff is a platform of rock overhanging the sea, the water underneath rather deep; the swell sets

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in heavily on this rock, but never breaks, being nearly the only spot in the bay where it does not. The danger to avoid is the boat getting under this rock; should you be so unfortunate, there is little chance of saving the crew; the boat should be backed in, and opportunities taken to jump out. At times landing is impracticable. Merchant vessels anchor off the beach, and land their cargoes in large canoes. The surf on the beach is much too heavy for ship's boats.

This anchorage is very well sheltered by the reef running out from Point Remedios, and is quite safe. The *Hero*, merchant barque, rode out an entire bad weather season without the slightest danger, but complained very much of the rain and weather generally. In answer to my inquiry—"How did you keep your people well?" He told me that—"He never let them go on shore, and went on shore himself no oftener than he could possibly help." They were frequently many days together unable to communicate with the shore.

(To be Continued.)

ON THE GEOGRAPHICAL POSITION OF THE CITY OF SANTO DOMINGO. —*By Sir Robert H. Schomburgk, Corresponding Member of the Royal Geographical Society of London, &c., &c., &c.*

Mr Oltmanns in the *Recueil d'Observations Astronomiques, par Alexandre de Humboldt*, vol. II, p. 589, gives the position of the City of Santo Domingo as:

Lat.	18° 28′ 40″ N.
Long.	72° 19′ 52″ W. of Paris, or
Paris	— 2° 20′ 22·5″ E. of Greenwich
Long.	69° 59′ 29·5″ W. of Greenwich.

The determination of the longitude rested upon an eclipse, observed the 23rd of April, 1780, by Don Luis Arguedas and José Antonio Sartorio, officers of the Spanish Marine, which Mr Oltmanns has recalculated. Lieut. Raper, R.N., in the *Table of Maritime Positions* which accompanied the first edition of his *Practice of Navigation*, gives the latitude 18° 29′ N., and the longitude 69° 59′ W., of Greenwich. In the 8th edition of *Purdy's Atlantic Memoir* the longitude is given as 69° 58′ W., resting upon the observations of the officers acting under the orders of the Spanish Government, for the purpose of ascertaining the positions of the principal points in the West Indies, with subsequent corrections. This position is evidently too far west: I considered it as such when I directed my attention, as early as 1830 to 1835, to the hydrography of the West Indies, and effected some surveys which have been superceded by the elaborate surveys of Lieut. Lawrance.

The first proof that I was correct in my supposition I obtained by

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measuring the meridian distance between Port Royal of Jamaica and the City of Santo Domingo, in January, 1849. Having been appointed Her Majesty's Consul to the Dominican Republic, I embarked for my destination on the 16th of January, on board H.M. steamer *Vixen*, at Port Royal in Jamaica; I had with me the following chronometers:—box chronometer, Baker 816, pocket chronometer, Parkinson & Frodsham 1887, both the property of the Admiralty, and a pocket chronometer of my own by R. Molineux, No. 3266, which, during the passage from Southampton, had a very uniform rate. On board the *Vixen* were two chronometers, one by Dent, the other by Arnold, but I cannot state their numbers. These chronometers had been rated at Port Royal, taking the latitude at 17° 55′ 30″ N., and the longitude at 5h. 7m. 30s. W. (76° 52′ 30″ in arc). We arrived at Santo Domingo on the 20th, and the next morning observations were taken which gave the following results for the meridian distances between Port Royal and the anchorage of the *Vixen* at the Roads of Santo Domingo:—

P. chronometer	Frodsham 1887	7° 6′ 15″
B.	Baker 816	7° 0′ 43″
P.	Molineux 3266	6° 59′ 45″
Dent, Arnold	chronometers of H.M. steamer *Vixen*	7° 2′ 30″ / 6° 59′ 15″

Frodsham may safely be rejected, as I knew from experience that its rate could not be depended upon. The other four chronometers give as arithmetical mean: 7° 0′ 33″ in arc, or 28m. 2·2s. in time.

It is much to be regretted that such an important place as Port Royal should not have been fixed with sufficient precision to be numbered among Mr Raper's secondary meridians. Assuming 5h. 7m. 24·4s. W. for its position, we have for the anchorage of the *Vixen* at Santo Domingo Roads, 4h. 39m. 22·2s. W. of Greenwich. My estimated difference is however 6° 59′ 30″ in arc, or 27m. 58s. in time, equal to 4h. 39m. 26·6s. W. of Greenwich. The flagstaff of the British Consulate bore from the anchorage of the *Vixen*, N. 32° 30′ W., distant 850 fathoms, which would give a difference of 1·7s. or 25″ in arc, additive to the former result, in order to refer the same to the Consulate. Hence the flagstaff of the Consulate would be according to

Arithmetical means	4h 39m 29·9s	W. of Greenwich.
Estimated means	4h 39m 28·3s	

The next determination of the meridian distance between Port Royal and Santo Domingo, was communicated to me by Mr Waters, Master of H.M.S. *Helena*, who determined the anchorage of that vessel at Santo Domingo Roads, relative to Port Royal, as in 69° 52′ 30″, or in time 4h. 39m. 30s. W. of Greenwich. The flagstaff of the Consulate bore N. 10° W., distant 860 fathoms, which would make the longitude 69° 52′ 40″ W. Mr Hains, acting Master of H.M.S. *Persian*, communicated to me the longitude of that vessel as determined at her anchorage at Santo Domingo Roads on the 28th of April, 1850:

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Per chronometer, No. 200 (maker's name omitted)...	69° 49′ 30″
2211	69° 51′ 08″
mean	69° 50′ 19″ W. of G.

The *Persian* bore from the British Consulate S. 17° E., distant 868 fathoms. The chronometers had been rated at Port Royal, and the corresponding observations taken on the 23rd of March. Adopting 5h. 7m. 24·4s. for the longitude of Port Royal, the Consulate would be according to this determination in 69° 50′ 34″ W. A considerable time having elapsed since the chronometers were rated, and the vessel having previously visited Port au Prince and other Ports, this determination is somewhat doubtful.

H.M. steamer *Inflexible* anchored at the Roads of Santo Domingo, on the 4th October, 1850. According to observations taken by Mr Pyper, the Master, he deduced the following result for the position of her anchorage:—

	h m s	Mean. h m s
Per chronometer Norris & Campbell, 571 ...	4 39 30·57	
	4 39 31·28	
		4 39 30 97
Arnold, 545	4 39 28·07	
	4 39 28·78	
		4 39 28·42
Earnshaw 364	4 39 30·07	
	4 39 30·78	
		4 39 30·42
mean		4 39 29·97
Which would make the Consulate in		4 39 32
		or 69° 53′ W. of G.

Equally doubtful as in the case of the *Helena*, is the determination of the longitude by M. Dieudonné, the Commander of the French Man-of-war steamer *Crocodile*, a good hydrographer and scientific man, who made the longitude of the harbour of Santo Domingo (relative to Havana) 69° 53′ 55·5″ W. of Greenwich.

These are the determinations of longitude relative to points west of Santo Domingo.

There are perhaps few points so well determined in the West Indies as St. Thomas; according to the late observations of Lieut. Lawrance of H.M. surveying vessel *Scorpion*, Fort Christian at St Thomas is in 64° 55′ 40·5″ W. of Greenwich.

The Danish brig-of-war *Saint Thomas* anchored at Santo Domingo Roads on the 21st of April, 1850. According to the observations of Lieut. Groth, her meridian distance was from Fort Christian, by

Chronometer, Kessels, Hamburg	0h 19m 43 7s
L. U Zurgensen, Copenhagen	0h 19m 50 5s
Arnold, London	0h 19m 43 8s
Which gives a mean of	0h 19m 46s.

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The chronometers had been rated and the last observations taken on the 10th of April.

We have therefore for the meridian distance equal to 19m 46s or in arc	+ 4° 56′ 30″
Longitude of St. Thomas	64° 55′ 40·5″
Longitude of the anchorage of the Danish Man-of-war, at Santo Domingo	69° 52′ 10·5″ W. of G.

The vessel bore at her anchorage S. 4° E. from the Consulate, distant 860 fathoms, which would give for the Consulate 69° 52′ 15·5″ W. of Greenwich.

According to the observations of Mr Brown, Master of H.M.S. *Sappho*, the meridian difference between the vessel's anchorage at Santo Domingo and the coal wharf in St Thomas, was 19m. 45·6s. The chronometers had been rated at St Thomas, and the last observations taken on the 1st of December, 1851, and the first at Santo Domingo on the 9th of that month; the makers of these chronometers were Parkinson & Frodsham, No. 925, Arnold & Dent, 707, Arnold, 377. Mr Brown obtained as result of his observations of the meridian distance 19m. 45·36s., which will give the following longitude for the Consulate, viz.:

Christian's Fort at St. Thomas	64° 55′ 40·5″
Coal Wharf west of Fort	+ 0′ 21″
Longitude of Coal Wharf	64° 56′ 1·5″
Meridian difference in arc	4° 56′ 24″
Longitude of Anchorage	69° 52′ 25·5″
Difference of Anchorage and Consulate	+ 0′ 12·5″
	69° 52′ 38″ W. of G.

Lieut. Lawrance of H.M. surveying-vessel *Scorpion*, has had the goodness to communicate to me the result of his observations of the meridian distance between Christian's Fort at St Thomas, and the British Consulate, which he gives as

	+ 4° 57′ 3.45″
Longitude of St. Thomas	64° 55′ 40·50″
Longitude of Consulate	69° 52′ 43·95″ W. of G.

He observes, however, that the distance was not measured under very favourable circumstances, and he might perhaps have to alter it hereafter; but the amount could not be many seconds.

The observations of which I have given a detail give the following result as ascertained by distances

From East.		*of Santo Domingo.*	*From West.*	
Per *St. Thomas*	69° 52′ 15·5″	Per *Vixen*	69° 52′	4·5″
Sappho	69° 52′ 38″	*Helena*	69° 52′	40″
Scorpion	69° 52′ 43″	*Inflexible*	69° 53′	00″
Mean	69° 52′ 32·2″	Mean	69° 52′	34·8″

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General mean ..... 69° 52′ 33·5″
or in time ..... 4h 39m 30·2s

For the Flagstaff of the British Consulate at the City of Santo Domingo.

Raper gives the position of Santo Domingo in the third edition of his *Practice of Navigation*, as in longitude 69° 50′ W. By referring to Norie's Epitome, eighth edition, I find it stated as 69° 52′ 54″ W., and in the *Connaissance des temps pour* 1852, 69° 52′ 16·5″. I see however no reason to change this position as just stated, namely 69° 52′ 33·5″ W. of Greenwich. I do not know what elements Norie has had to deduce his longitude from, but while the position was stated in most of the geographical tables from 7′ to 8′ in arc too far west, Norie's differed only 20″ in arc.

We find generally the latitude of Santo Domingo stated as in 18° 28′ 40″ N. This rests upon the determination of the Spanish officers. The spot where the observations were taken was somewhat to the south of the city, close to the embouchure of the Ozama. The position of the city leaves no doubt respecting the situation of this spot, the latitude is, however, 28″ in arc too far north.

I give the following details respecting the observations taken by myself.

On April 9th, 1850, I took the following observations of the Pole Star out of the meridian. Index error + 10″; error of chronometer — 11m. 20·3s.; barometer, 30·13′; attached thermometer, 81° F.; detached thermometer, 81·2° F.

Time per Chronometer.	Star's observ. Altitude. in Art. Hor.	Mean Greenwich Time of Observation.	Sidereal Time of Observation.	Reduced Altitude of Stars.	Latitude of Place.
h m s	° ′ ″	h m s	h m s	° ′ ″	° ′ ″
8 13 5	35 26 10	12 42 13·7	9 14 19·5	17 39 0	18 28 15·7
8 14 55·6	35 25 00	12 43 4·3	9 15 10·2	17 38 45	18 28 17·3
8 17 13	35 23 40	12 45 21·7	9 17 28·4	17 38 4·8	18 28 22·7
8 19 19	35 22 40	12 47 27·7	9 19 34·5	17 37 34·6	18 28 33·7
8 20 51	35 20 50	12 48 59·7	9 21 6·6	17 36 39·4	18 28 6·3
				N.	18 28 19·1

April 17th, 1850.—Circummeridional altitudes of * η Argus; index error — 10″; barometer, 30·05°; attached thermometer, 80° F.; detached thermometer 78° F. Chronometer fast of mean time at place at meridian passage, 16m. 36s.

The mean of seven observations gave the latitude 18° 28′ 6·5″ N.

April 18th, 1850.—Circummeridional altitudes of * *u* Argus; index error — 10″; barometer, 30·06°; attached thermometer, 77° F.; detached thermometer, 75° F. Chronometer fast of mean time at place at meridian passage, 17m. 10·5s.

The mean of three observations gave the latitude 18° 28′ 2·7″ N.

April 18th, 1850.—Circummeridional altitudes of * γ Ursæ Majoris; index error — 10″; barometer, 30·07°; attached thermometer, 75·7° F.; detached thermometer, 74° F. Chronometer fast of mean time at place at meridian passage 17m. 11·6s.

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The mean of twelve observations gave the latitude 18° 28′ 25·9″ N.

April 18th, 1850.—Circummeridional altitudes of δ Certauri; index error — 10″; barometer, 30·07°; attached thermometer, 75·7° F. detached thermometer, 74° F. Chronometer fast of mean time at place at meridian passage 17m. 11·9s.

The mean of three observations gave the latitude 18° 28′ 7·1″ N.

Clouded between the 1st and 2nd observation.

The result of these observations would be

North Stars.		*South Stars.*	
Polaris	18° 28′ 19·1″	η Argus	18° 28′ 6·5″
γ Ursæ Majoris	18° 28′ 25·9″	ω Argus	18° 28′ 2·7″
		δ Centauris	18° 28′ 7·1″
Mean	18° 28′ 22·5″	Mean	18° 28′ 5·6″

Mean of north and south stars 18° 28′ 14·5″ north. During the stay of H.M. surveying-vessel *Scorpion*, the results of the observations of the officers for the latitude of the Consulate were as follows:

North Stars.		*South Stars.*	
British Association Catalogue ✱ 3346	18° 28′ 19″	Br. Ass. Cat. ✱ 3644	18° 28′ 4″
		3702	18° 27′ 59″
ω Ursæ Majoris	18° 28′ 13″	3928	18° 28′ 6″
γ Ursæ Majoris	18° 28′ 11″	4090	18° 28′ 2″
Br Ass. Cat. ✱ 4123	18° 28′ 29″	4211	18° 27′ 50″
Mean	18° 28′ 18″	Mean	18° 28′ 0″

Mean of north and south stars 18° 28′ 9″ north. The mean of the two sets would therefore give as result of the latitude of the Consulate 18° 28′ 11·7″ north.

For the purpose of identifying at any period hereafter the site where these observations were taken, should the Consulate be transferred to some other house, I add the following true bearings and distances:

	True Bearings.	Dist. in faths.
Homenaje or Signal Tower	N. 67° 13′ E.	439
Cathedral (Cross on the Western Portal)	N. 50° 6′ E.	101
Church of Santo Domingo	N. 78° 35′ E.	56
Church of Regina (Cupola)	S. 46° 37′ W.	59
Church of La Merced (little Lantern or Turret on the eastern part)	N. 35° 25′ W.	192

According to these determinations the cross of the western portal of the cathedral of the city of Santo Domingo would be in

Latitude ..... 18° 28′ 17·5″ N.
Longitude ..... 69° 52′ 26″ W. of G.

And the flagstaff of the signal tower in

Latitude ..... 18° 28′ 22″ N.
Longitude ..... 69° 52′ 10″ W. of G.

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No coasts require more a careful and detailed survey than the south and east coasts of the Dominican Republic; that is from Cape Mongan to the Bay of Samana. The chief article of export of the Dominican Republic is mahogany; and the vessels that are exporting it are mostly chartered at Saint Thomas with the condition to load on three or four places of the coast, some of which are of such a nature that it is almost impossible to effect the taking off the cargo without risk of life and property. To this must be added that the pilots are ignorant men, a few only acquainted with the English language, and some among them so devoid of principles, that a fraudulent shipwreck may be procured for a couple of doubloons. All my exertions to put a stop to this nefarious system have unfortunately been hitherto in vain. The absence of an accurate survey of the coast places the master of the vessel almost entirely at the mercy of the pilot; it is therefore sincerely to be trusted that Lieut. Lawrance will receive instructions as soon as possible to extend his surveys to this coast. None have more seriously suffered from the present state of things than British Insurance Companies. In the interval, I continue to occupy myself with completing my knowledge of the Bays and loading places along the Coast, for which purpose I am on the point of departing for the southern provinces of the Dominican Republic. I will forward the result of my information, on my return, for publication in the *Nautical Magazine*.

Notes on a Voyage to China in Her Majesty's late Screw Steamer Reynard.—*P. Cracroft, Commander.*

(Continued from p. 375.)

In the afternoon I saluted his Highness's flag with 21 guns, which compliment was duly returned by the fort, a wooden building, on which are mounted six guns, which most probably once did duty on board the *Royalist*. They are almost *à fleur d'eau*, and admirably situated to enfilade the river. I afterwards proceeded to inspect the city, if the collection of wooden and matting huts, extending at least a mile on both banks of the river, are worthy of the name. Unfortunately the afternoon turned out very wet, so that I could not effect my object so fully as I had intended. I saw, however, enough to convince me of the rapid advance which civilisation is making in a country, until yesterday sunk in the lowest depth of barbarism. At the court-house, justice was being administered by two Englishmen (magistrates) in the English fashion. The native Dyacks bow to their decisions, satisfied apparently of their infallibility. The church, English of course, under the care and supervision of the Rev. Mr. Mc Dougal, is rapidly progressing; its site is admirably selected, and it will form a most conspicuous object in approaching the town. Mr. Mc Dougal's dwelling house, just completed, is quite a stately building, and at present serves as a temporary chapel for his congregation. His wife, the only lady

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in Sarawak, has taken "the school" in her charge, and ere many years have elapsed the tribe of little heathens, now scarcely able to lisp, will be singing their Redeemer's praise; in short, the great work for which England has been specially raised up by Providence "among the nations" has been here begun.

I next visited the Rajah's antimony stores and smelting houses, the works of which are for the moment suspended, and then returned on board. In the evening I had the honour of dining with His Highness, together with all the officers who could be spared from duty, (for a general invitation had been sent,) and we afterwards witnessed a "levee extraordinary." As soon as the dinner was over and dessert placed upon the table, the native princes entered, and having each pressed the hand of their Rajah, retired, and plumped themselves down on their haunches, close to the wall of the apartment, preserving a most solemn silence. Meanwhile we passed the wine and continued our conversation, apparently taking no notice whatever of the extraordinary looking group around us. On this occasion there entered, for the first time, a number of the pirate chiefs who had been lately defeated by the Rajah in the expedition which he conducted up the Sarebas river with the boats of the *Nemesis* and *Albatross*, and who had come to Sarawak for the purpose of making their submission. Fine looking fellows they were, but I was surprised to find no trace of ferocity in their expressive countenances; all wore their kreeses, and there could not be a more forcible illustration of the power of moral force, than that a party of unarmed Englishmen, not more than a dozen in number, should permit themselves to be surrounded by such a set of ruffians at heart as these, for I fear their promises of amendment are but temporary, and that, when the time comes, in which they think they can do so with impunity, "their hands will be once more turned against every man's."

The next morning the ship was crowded with these people, and their curiosity was gratified by an inspection of the novelties presented to their view. At 7 o'clock, in tending to the flood, the ship's heel caught the pinnacle of a rock on the left bank of the river, which is here not more than 200 yards wide at high water, and the kedge had to be laid out to free her. At 9h. A.M., we bade adieu to Sarawak,—I trust only for a time,—and proceeded down the river, piloted by a Mr. Cruikshank, who took us on the opposite side of the Samarang ledge, where, however, to my surprise we had only 2½ fathoms. At the junction of the Moratabas, we found only 2 fathoms, but as the the bottom was soft mud, the ship dragged over it very well. At the junction of the Quop with the Moratabas, the river widens considerably, and becomes indeed a noble stream, with water enough for a three-decker. This was the highest point the *Meander* reached, when she brought out Sir James Brooke, in 1847; and here our pilot, Mr. C., left us. From hence to the sea, the river gradually increases in width to upwards of a mile and a half, and the scenery is of the most magnificent description. Most sincerely do I hope that the resources of a country so rich in almost every production useful to man, may be ere

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long developed. Before noon, with the help of a strong tide, which swept us through the numerous fishing stakes, and increased our speed to nearly 10 knots over the ground, we were abreast of the entrance of the river; and at 2h. P.M., a breeze having sprung up from off the land, we got the screw up once more and shaped a course for Labuan.

Memo. There is no fresh beef to be had at Sarawak. Pork, however, could have been procured if necessary, and, probably, vegetables enough for our ship's company twice a week. I took the opportunity to fill the boilers with the river water, as well as the tanks that were empty, only intending it, however, for washing and culinary purposes. Judging from its appearance, it is wholly unfit for drinking, and would most probably occasion dysentery. Thanks to our distilling apparatus, however, we are not likely to want it for drinking. I was anxious to take on board some wood, which the Rajah informed me I could have in almost any quantity, for the purpose of ascertaining whether we could use it for steaming. Unfortunately, however, the tide did not suit for getting it off, and I could not afford to wait another day, so this important point must be settled some other time.

Contrary to my anticipations, the fair wind, although very irregular in force, continued. We kept the land close aboard, rather a nervous proceeding when charts are so indifferent as those we are supplied with, even Sir E. Belcher's* latest!!! is very incorrect†. We had heavy rain squalls at night, very threatening in appearance, but, except as a measure of precaution, rarely requiring sail being shortened. In one of these, however, at midnight on the 28th, (Sunday,) I was obliged to drop the anchor, we were so close to the land, and scarcely able to see a ship's length. On the 29th, at 1h. P.M., we entered the harbour of Victoria, Labuan, off which we found the *Nemesis*, Mr Wallage, Commander, underway for Sarawak and Singapore. Of this infant settlement I can say but little. The position of the town seems badly chosen, owing to the unhealthiness of the site, and it will probably have to be removed. There is nothing yet like trade, a few small proas were at anchor close to the beach, and a few straggling houses of bamboo and matting, like houses on stilts, were scattered about without any order or form; one of these was the *Post Office*. I walked to the Lieut.-Governor's by an excellent road which already extends nearly three miles into the forest. The houses of the Officials, Barracks, Jail, &c., are dotted on either hand, in the course of this distance. I observed a guard parading idly in their cross belts, and thought they might have been much better occupied with axes in their hands. The Governor and his lady received me courteously, and, after some tiffin, I rode back; and made sail for Coal Point, situated at the other extremity of the island, where the coal vein, on which the prosperity of this colony mainly depends, is being worked. I found the Hon. Company's steam-vessel *Semiramis* here, busily employed completing fuel, and Commander Daniel came on board to

* Sir Edward Belcher's charts of the coast of Borneo, were not on board the *Reynard*; they were not published when she left England.—ED.

† Vide page 59.

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offer me every assistance, though in consequence of the want of hands to work the seam, he was himself getting on very slowly.

The Eastern Archipelago Company, who have a lease of the mine, commenced their operations nearly five months ago. Their superintendents, Messrs. Mottley, have made great exertions; but the difficulties that have been, and are daily being, thrown in their way, effectually check their proceedings. The great want is labour; but Malays and Chinese will not settle in a place where they are not permitted to hold a lease except on the most extravagant terms. If any encouragement were held out to these people, I have no doubt hundreds would collect here. Again, in a country where every man who cuts down a tree ought to be considered a public benefactor, Messrs. M. have had an injunction to restrain them from cutting "a stick," excepting on the land, about 50 square acres, which the Company has actually taken possession of and paid for. The consequence is, that excepting almost the ground which they stand on, this part of the island is still impenetrable; not from jungle, but from densely packed huge forest trees, of the most valuable timber; and I had great difficulty in getting a few yards beyond the limits of the E. A. Company's property. Then, inasmuch as the "English" is the law of the land, every petty theft must needs be tried by a jury, and Messrs. M. are summoned repeatedly to Victoria; although during their absence, which cannot well be less than twenty-four hours, on account of the distance, there is no one to superintend their labourers!

The coal is of excellent quality, quite equal to some Welsh we have had, which it resembles very much in appearance, and in the light colour of the smoke. Owing to the assistance Captain Daniel gave us, we got on board, in about nine hours, twenty-two tons. This was nearly all surface coal, and every piece had to be washed separately to cleanse it from the sand and soil that adhered to it. But although it is so good, there is every reason to believe that the quality will yet improve as the workmen get deeper into the seam. I cannot help, in conclusion, recording it as my belief, that if "let alone" this concern will flourish, and return an ample dividend on the capital invested. I should doubt, however, whether the "Colony," under its present auspices, will ever thrive. "Dissensions are fatal in small communities," and here, it is said, the conduct of a Lieut.-Governor has been too successful in sowing the seeds of discord.

On the 30th, at 6 P.M., we steamed out of the anchorage; got the screw up soon after, as there was a nice light breeze from the southward, and shaped a course to pass to the westward of Mangaloon. This part of the coast is not so studded with shoals as it is to the southward of Labuan; and the soundings are more regular. I may remark here, that off Barram Point the soundings are very uneven. With the point just in sight from the deck, probably about fifteen miles distant, and steering N.E.b.E.¼E., we had 31, 17, 7, 10, 15, and 6½ fathoms; shoaling in one cast from 17 to 7 fathoms, hard ground. As to the Five Comrades, I should very much doubt their existence at all; we passed over the position assigned to the easternmost, and had

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31 fathoms hard sand; although the weather was remarkably clear, we saw nothing resembling islands from our mast-head; and had any islands, of even a few feet elevation, been within fifteen miles of us, we must have seen them. Anticipating calms or very light winds in the Palawan passage, I had taken on board about 10 tons more coal than the bunkers would hold, in case it should be advisable to steam; and fortunate it was I did so, for north of Balabac we lost the wind, and twenty-four hours steaming took us through the worst part of this most dangerous navigation; passing to the eastward of the Royal Captain and Bombay Shoals; and we shall still, I hope, arrive at our destination with the fuel complete.

On the night of Monday the 5th of November, being abreast the southern extremity of Luzon, we experienced a most terrific storm of thunder and lightning, and rain, which lasted nearly twelve hours. Both in duration and intensity it was by far the worst I ever witnessed. The lightning played over and around our mast-heads unceasingly, and many a misgiving was expressed by the officers that the wire rigging with which the ship is fitted would prove the occasion of her destruction. In this feeling, however, I did not participate; being satisfied that as long as the continuity of the conductors remains unbroken, there is nothing to fear, but that they are equal to carry off the heaviest discharge of the electric fluid, should we be so unfortunate as to be struck by it. This storm was followed by a considerable fall in the temperature; an occasion of much thankfulness, more especially to the inhabitants of the steerage, for the thermometer in the Mids berth had been rarely below 90° since we entered the Straits of Sunda, and occasionally 95°; in fact, the illness (a low fever) that Messrs. Golden and West have contracted, has mainly to be attributed to the extreme heat. Their recovery, hitherto very slow, will now I trust be more rapid.

On Thursday the 8th of November, a gradual fall of the barometer, accompanied by an increase of wind and considerable swell, indicated that a breeze was coming. I had two days previously shifted all the square sails, but unfortunately not the jib, which was soon split. In the afternoon got the anchors stowed, and everything snug; not, however, before one of the bow ports had been washed away by the heavy sea that got up as if by magic. Before sunset, (a very wild one,) the ship was under the close-reefed main-topsail, reefed foresail, fore-topmast-staysail, and main-trysail, and I felt far from comfortable, owing to our proximity to the island of Luzon, for though Manila is under our lee, in this thick weather to bear up is not to be thought of. The gale continued to increase, together with the sea, all Friday, and at sunset I sent the top-gallant masts on deck. It appeared then to be at its height, as the glass fell no more after 5 o'clock, and at midnight there was a visible change in the appearance of things. Wore to the northward, which brought the sea a-head; however we must make the most of it, so at daylight made all possible sail, and most admirably the ship behaved, scarcely wetting any part of the deck abaft the fore-hatchway, though pressed against almost a "wall."

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I am convinced that no vessel with the ordinary bow could have steered our course this forenoon. In the evening passed a vessel, evidently a whaler, under a close-reefed main-topsail, and reefed foresail, standing the same way; got the top-gallant yards across again, and set the sails, the wind gradually falling, although it still kept in the same quarter.

At 2 P.M. on Sunday, the 11th, the wind shifted to the north, and gradually drew round to N.E., so we have the north-east monsoon at last. It blew very hard on Tuesday, and the ship was "pressed" in carrying single reefed topsails, reefed courses, and occasionally the main-top-gallant sail. On Wednesday, the 14th of November, I obtained my first view of the China coast. At daylight the Lema Islands were in sight, but we were unable to weather the northernmost one, owing to the southerly set, which averaged nearly 30 miles in the 24 hours, and we did not accomplish this until 4 P.M., after a severe struggle.

The first appearance of Hong Kong is anything but inviting; its rugged outline, and barren hills, reminded me strongly of the dreary western coast of Ireland, about Bantry Bay, and the eye was soon tired of gazing at the uninviting prospect. But if the land appears dull and inanimate, this cannot be said of the water, which teems with fish, and the Chinese are expert fishermen. The consequence is, the number of boats pursuing this occupation is incredible, and although I shall doubtless soon get tired of their monotonous rig, they certainly at first sight give life to a scene otherwise most uninteresting. At 7h. 30m. P.M. the anchor was dropped in 13 fathoms in Chiagtchu Bay, (Hong Kong Island,) and the next morning, after a hard beat through the narrow passage past Green Island, we anchored in Victoria Harbour. The *Cleopatra* arrived in the afternoon, having experienced the same bad weather, and been within a very few miles of us. We found here H.M. ships *Hastings*, *Columbine*, and *Medea*; the *Pilot* arrived (from Amoy) about an hour after we anchored. Heard of the death of Rear Admiral Sir Francis Collier on the 28th ult., by which Commodore Plumridge becomes, *pro tem.*, Commander-in-Chief of the station. Commenced refitting, which the rigging is in some need of, as nothing has been done to it since we left Rio; discovered a very ugly looking "crack" in the main-yard, which was declared to be nothing by the carpenter's mate. However, a stout iron hoop was put over it, to make assurance doubly sure There is a government naval store at West Point, a long distance from the men-of-war's usual anchorage. Why this spot was selected at the occupation of the island, I am at a loss to discover, but its disadvantages are manifest; the storehouses themselves are a disgrace to the country, constructed chiefly of "old staves," and such like wretched materials; they are neither wind nor water tight, and more stores and provisions have been condemned already in consequence, than would have paid for the construction of buildings on the most magnificent scale. We send for our beef here every morning, and there are forges for the armourers of the squadron. Messrs. Bowra and Humphreys (ship-chandlers)

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have the contract for supplying water, which comes off in convenient tanks, and is most excellent. The (overland) mail from England is due about the 20th of every month, and is despatched on the 30th by the Peninsular and Oriental Company's vessels. On the 30th I received orders from Captain Massie to proceed to Amoy, as soon as ready for sea, in Her Majesty's ship under my command, to take the place of H.M.S. *Pilot;* so having given all hands leave, we refitted and painted, &c., and I was ready for a start on Saturday, December the 3rd.

After an unsuccessful attempt to get away on the 5th, (owing to running foul of the *Alligator,* which stove in the bulwark of the starboard-waist, and carried away the spare-topsail-yard,) at 10 A.M. of the 11th we stood out of the Lymoon Passage, with a fine leading wind and ebb tide, which swept us rapidly through the narrow pass. The Rev. Vincent Stanton (the Colonial Chaplain) is my guest to Amoy, which I trust to reach before Christmas-day.

The first thing that a person navigating this coast ought to do, is to thoroughly acquaint himself with the set of the tides. Owing to our deficiency of this important knowledge, which can only be gained by experience, in the absence of any directions on the subject, we lost in the afternoon considerably, and found on dropping the kedge the tide was setting us to leeward a knot and a-half per hour. At 11 P.M. we again stood off and found the north-east monsoon very strong, and setting so considerably, that at 8 A.M. the next morning we had gained little or nothing to windward, which determines me for the future to keep in-shore, and anchor every night. All the afternoon of the 12th was occupied in working through the narrow channel between Tooniang Island and the main, to the westward of Bias Bay. Anchored shortly after dark under Cliff Island; but got very little rest, being kept on the "*qui vive*" by some junks, (we found out in the morning they were war junks,) which hovered round us, beating their "tom toms," and squibbing off their match-locks the greater part of the night. Had they been piratical vessels, with which this neighbourhood is so much infested, I was well prepared for their reception, the broadside guns being double-shotted with grape, and a strong anchor-watch on deck. I only wish they would take the *Reynard* for an opium clipper, and try what she is made of.

At daylight our anchor was up, but we did nothing against the current, for the want of wind; so getting the steam up by noon, as I could not afford to waste another day, we passed inside some very remarkable rocks called the Pillars, rounded Fokai Point, and before dark anchored off the entrance of the place marked on the chart "an extensive sound," to the westward of Ross Head in Hong-hai Bay, which I am ordered to explore if possible—an interesting service, as no European vessel has succeeded hitherto in getting in.

Here the *Columbine* ran aground in attempting to follow a junk, commanded by the notorious Chui-a-poo, which her boats afterwards destroyed; the iron steamer *Canton,* of very light draught, having refused to attempt the bar.

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At daylight on the 14th Mr. McAusland, the master, went in to examine the entrance, and on his return with a satisfactory report, we stood slowly in under steam, notwithstanding the fog which had rolled off from the land was so thick we could scarcely see a ship's length ahead. Guided by the sound of the breakers we cleared the outer bar safely, passing the rocks on the port hand so close, that a man could have jumped on them easily. The master now proceeded ahead in a boat, and I followed, feeling my way in carefully. In spite of this precaution, however, the ship struck twice on the inner bar, but never lost her way, and the next moment was in 7 fathoms. The rest was easy, the soundings regular, and after passing the two Chinese forts, (one on either hand,) and a very picturesque-looking joss-house close to the water's edge on the port hand, we proceeded slowly up the extensive sound, to the astonishment of multitudes of people, who flocked from every quarter to see us pass.

At a point where the channel divided, I paused for a moment in doubt which one to take; that on the starboard hand seemed the broadest, so I proceeded up it, with a boat on each bow, giving the soundings. This channel led between two remarkable boulder rocks up to a town, which, I was afterwards informed, is called "Samchou." An embankment had been formed in front of it, and for some distance below, the land behind being paddy fields. This embankment was literally alive with human beings, and a scream from our whistle set all their tongues going. After passing between the two Boulders, the water shoaled, and we turned in our own depth, and stood down again to the junction, where the kedge was dropped during the dinner hour. While here I persuaded some of the natives to come on board, and through the medium of Mr. Stanton, learnt the names of the two towns that are in sight, the largest of which, (Taichou,) situated on the island which we steamed half round, I named this inlet from. These people assured us there were no pirates here, nor had there been any for a long time; that they were all honest people, who got their livelihood by fishing, &c., &c.

After dinner the kedge was hove up, and we steamed up the channel on the port hand, turning, as before, in our own depth; then dropped down and anchored just inside the point above the inner bar, and below the two forts and joss-house, which (the latter especially) are picturesque looking objects. After again examining the bar well with the master, I decided, although the flood tide was making in now very strong, to start at once. Accordingly at 5 P.M. the anchor was up, and we stood out. In crossing the inner bar, the tide caught the bow and we *dragged* over; all sail was then made, and we went slowly out. The same thing happened as we opened the outer rocks, when she gave two slight thumps and went off into deep water; and now we are clear, I must say "Taichou" is a most difficult place to get at, but it is certainly a great satisfaction to have accomplished our object, although at an expence of seven tons of coals! Burnt the fires down while the people were at supper, and got the screw up afterwards;

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made a very good reach during the night, and anchored at the bottom of "Hie-chi-chin" Bay late in the evening of the 15th. Having got so far on our way, I must pause to note a few remarks upon the appearance of the country, so near to which we are per force sailing. The same forbidding, dreary, barren aspect that I noticed as being the characteristic of Hong Kong and its neighbourhood, still obtains, and Mr. S. tells me will continue the whole distance to Amoy. I have never seen any country more uninviting. Now and then, *very* rarely *indeed*, the roof of a building, probably a joss-house, may be seen projecting above some hollow, and near it (overhanging generally) a tree or two; but these not always. The most striking feature in the scene is that which perpetually reminds us of our mortality, and it is impossible to look at the tombs, which are scattered everywhere, even to the summits of the mountains, without bestowing a moment's reflection upon the creed of these poor heathens. Melancholy indeed is the recollection that more than 300 millions of human beings should be living in utter ignorance of the true God and his Christ; that "I am the resurrection and the life" should never have been sounded in their ears. Alas! that the efforts of our missionaries should have been hitherto attended with so little success. I fear, also, the tracts which were distributed so liberally by Mr. Stanton at Taichou, will do little good!

16th, "Chino," a town on the east side of "Hie Chie Chin" Bay, must be a large place and fishing station, if I may judge from the fleet of small craft we got entangled among this morning. Two hundred and fifty were counted together, and many more must have been in sight. Nowhere have I seen such numbers of fishing vessels as on this coast; it is quite a feature in the scenery. These boats are smaller than the first we fell in with off Hong Kong, and appear to have only three people in each, or three and a boy, perhaps, to manage them. I intended to reach the anchorage at Cupchi to-night, but the current or tide proved too much for us, and at daylight on the 17th I found the ship had been anchored in a very awkward place to leeward of Hutung Point and the Figure Rock; and probably had not a fishing vessel been right in our way, and the helm been put down to clear her just before the anchor was let go, we should have been in a scrape. Providence certainly put that vessel there to be our safeguard; moreover, had the anchors hung as they both did this evening, in Tungao Road, it would have been all up with the *Reynard*—truly have I much reason to be thankful!

Rounded Breaker Point in the forenoon of the 18th, and found a very troublesome sea off it. The ship behaved however uncommonly well, and never refused stays on the off-shore tack, a contingency for which I had quite prepared my mind. It was necessary of course to help her by hauling down the head-sails, checking the lee head-braces, &c.

At 6h. 30m. P.M. we anchored for the night in Haiman Bay. The next morning, the monsoon having fallen light, got the steam up, and

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rounding the Cape of Good Hope, a very remarkable headland, hove to off the Opium Depôt in Namao Strait at 1 P.M.; the masters of the two vessels stationed here came on board, and very superior intelligent men they appeared to be, most anxious to give every information respecting the piratical vessels which swarm on this coast.

The opium traffic is deserving a passing remark. It has been created by the fondness of the Chinese for this intoxicating drug; and though the dealers in it have been held up to reprehension for pandering to a vice so unhappily developed, I cannot myself see that they deserve it more than the manufacturer or retailer of British gin, or gunpowder, or any other compound, that contains within itself the elements of destruction to human life. This is certain, that, were we to give up the trade to-morrow, some nation, less conscientious, would embark in it; and the result, as far as the Chinese are concerned, would be the same. But it would be impossible to put a stop to it, without at the same time almost annihilating the trade between England and China.

McCulloch, in his *Commercial Dictionary*, (article Canton,) sets down the value of the imports into China, in the year 1845, at 37,062,811 dollars, of which sum the single article "opium" figures for 23,000,000 dollars, exceeding that of all the other enumerated articles put together. The exports he states to be 30,566,426 dollars, the single article tea being 23,203,082 dollars, or above two-thirds more than the value of all the other articles. It thus appears that "opium" is of nearly the same importance to China as an *import* article of exchange, as "tea" is one of *export*, or its importance may be illustrated as follows:—

A—Has a consignment of cotton goods, which he is instructed to sell, and remit the proceeds in bills to England, say £1000.
B—Has Company's bills to sell, and has been instructed to remit in tea, say £1000.
C—Has a credit on London, against which he is to draw and send home tea, say £1000.
D—A Chinese merchant, has tea to dispose of, say value £2000.
E—Has opium to sell, say value £1000, and remit to Calcutta.
F—Is a buyer of opium with money, say £1000.

Now it must be quite clear that without opium, in this case, no transactions could take place in conformity with the instructions the agents have received from England; but now the chain is complete;

F—buys E's opium, £1000.
E—buys B's Company's paper, to remit in payment of the opium, to his constituent in India, £1000.
C—buys half of D's tea, £1000
D—buys A's cotton goods with the £1000 received from C.
A—buys C's bills on London, to remit for the cotton goods sold, £1000.

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B—buys, with the £1000 he has received from E, the remaining half of D's teas.

Thus, by the sale of opium to the extent of £1000, the following operations are perfected, namely:

2	exchange operations	£2000
1	sale English goods	1000
1	opium	1000
2	tea	2000
6		£6000

With these facts staring us in the face it is in vain for philanthropists to declaim against the opium trade, however desirable it may be in a moral, social, and religious point of view, to put an end to so odious a traffic.

The largest houses engaged in the trade, are Messrs. Dent & Co., and Jardine, Matheson & Co., and their establishments at Hong Kong are on a magnificent scale. The opium is distributed along the coast, by fast sailing schooners, commanded by intelligent men, of great experience in this navigation; there are other vessels stationed at different points to receive the cargoes, and dispose of them. The depôts here are the *Anonyma*, brig, (formerly Col. Greville's yacht,) belonging to Jardine & Co., and the *Hong Kong*, barque, belonging to Dent & Co. They are moored about a cable's length apart, so as to be able to afford each other assistance in case of need, and are well prepared to repel an attack, the boarding nettings being triced up, and guns, both broadside and pivot,—the latter raised on platforms above the bulwarks,—loaded and run out.

The depôt ships at the six islands near Amoy, are *Lord Amherst*, barque, Dent & Co.; *Path-finder*, barque, Jardine & Co.; and *Royalist*, schooner, (formerly Sir James Brooke's yacht,) now belonging to Syme, Muir & Co.

There are also, I believe, vessels stationed at Foo-chou-foo, Woosung, Chinchew, and in the Cap-singmoon passage, near Hong Kong. Besides these the American merchants have several; but I have yet to learn the particulars of the share they take in the trade.

At 2h. P.M., left Namao, passing through the stakes which extend right across the strait for fishing purposes, intervals being left for shipping. Observed a full rigged ship to windward, turning through the straits, which proved to be the *Henry Winch*, a vessel that sailed from Hong Kong for Amoy, a few days before us. Anchored for the night in Chauan bay, and got the screw up. Away at daylight again, and passed the *Henry Winch*, still at anchor, in Owick Bay. She was not long after us, however, and, in the day's work—blowing fresh—showed herself no bad sailer, although we beat her half a mile an hour dead to windward. Anchored in the evening in Tongsung, a magnificent harbour with shelter for *a fleet* from all winds; the town is

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walled, and seems an extensive place; and the people appear to be accustomed to strangers, as a boat came off with supplies. Away at daylight again, and, having a slant, made a good lay; passed outside Rees Pass and fetched into Red Bay, shortly after dark. The *Henry Winch* was to windward of us this morning, having kept under way all night, per force, as she had no anchorage at sunset convenient, without bearing up, which must always be a dernier resort.

22nd.—Started from Red Bay under steam, as it was nearly calm, and I am anxious (and so is Mr. Stanton) to be at Amoy to-day. Skirted the dangerous shoals (the Merope) and passed close to Chapel island and entered the Amoy river by the southern passage. Passed the Cornwallis rock, at 1h. 30m. P.M., but, being anxious to see everything that is to be seen, ran inside Kulangseu, and anchored off the inner end of the island, with the northern extreme of the city bearing E.b.N., a very snug anchorage, and we are not much exposed to being fouled by the junks, which sometimes are obliged to take this passage.

Bearings of the Anchorage ... Hausen Island, N.¼W.
North extreme of Amoy, E.b.N.
Eastern extreme of Kulanseu, S.E.½S.
N.W. do. do S.b.W.¼W.
8 fathoms mud, veered to 50.

Draught of water, Forward 11 feet.
Aft 12

Temple H. Layton, Esq., is H.M. Consul here, with the following staff: Backhouse, (an old messmate of mine,) Vice-Consul; Winchester, Medico; and Hertslet, First Interpreter; the two latter are married, as well as the consul; there are, besides, two young men bringing up for interpreters, Messrs Morrison and Pedder. The following mercantile firms are established here: Messrs Syme, Muir, and Co.; Jackson and Co.; Tait and Bradley; Priestman; and Milne; the two latter are the agents of Messrs Dent, and Jardine, respectively. The Missionaries residing here, are, Mr Doty, (American,) Strouack, L.M.S. Young, L.M.S.; Dr Hysslop being the medical man in charge of the community. All these missionaries are married, but none of the merchants.

Fresh beef and vegetables are supplied by a Chinese contractor, named Emarr, at 17 lb. for a dollar the beef; and one dollar per picul the vegetables. And water in bulk, the boats containing four tons, at one dollar a boat. It ought to come from Kulangsoo, as the water of that island is considered the most wholesome.

(To be continued.)

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The African Slave Trade.

We design giving a brief sketch of the present condition of the slave trade on the west coast of Africa. For this purpose we have consulted various authorities, and shall endeavour to furnish a clear, concise, and intelligible view of the extent and means by which this detestable and inhuman traffic is now being pursued, and offer a few observations on the mode of securing its entire suppression.

At Bissao, a Portuguese settlement north of Sierra Leone, slaves are occasionally shipped, but not with the open countenance of the local government. The River Pongas, 120 miles north of Sierra Leone, used to be an extensive slave market. It is now believed to be effectually clear of slavers. This river is navigable for large vessels 60 or 80 miles, and formerly had several slave factories on its banks. Seven slavers have been seen in the river at a time, and about 2000 slaves were shipped every year. At the mouth of the Shebar River, a little south of Sherbro Island, a considerable number were shipped in 1846 and 1847. It is now entirely broken up there. From this place to Cape Palmas, comes that portion of the coast actually in possession, by purchase, of the Liberian government. Along this entire line of seaboard, covering a distance of five hundred miles, once the favourite resort of slavers, it is entirely unknown. The mouth of the Galinas River was long noted as a shipping port. Slavers were almost constantly lying there. No less than eight thousand were annually shipped from this spot. When the Liberian authorities, aided by several English and French government vessels, visited and broke up, in 1849, at a very large outlay, this vile depot, they met with a determined resistance. They found there two large factories, with their appropriate suit of barracoons or outbuildings to house the slaves, as they were sent from the interior by the neighbouring chiefs. These factories were about 120 feet in length, were handsomely fitted up, and elegantly furnished. Both Sugry River and Cape Mount, about 80 miles north of Monrovia, were, at the time of their coming into possession of Liberia, infested with slavers. Cape Mesurado was an extensive slave market before the settlement of Monrovia. The same was true, in a degree, of the mouth of Junk River. Several gentlemen have seen the remains of the slave factory which stood near the mouth of the St. Johns River, before Edina and Bassa Cove were planted. In 1824, previous to the purchase of Bassa Cove by the Pennsylvania Colonization Society, 500 were shipped from that place in a single month! Cestos River is supposed to have been inferior only to the Gallinas in the numbers which it furnished. Cape Palmas also participated extensively in the nefarious business ere its settlement by American colonists.

From Cape Palmas eastward, there are no slave factories for more than ten degrees of longitude. This is generally known as the Gold Coast. For many years several European powers have here main-

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tained possession of sites by armed force. None of them can be called settlements; they are in reality *forts*. The first of these is Apollonia. It is one of the smallest on the coast, and is maintained by Great Britain. Next in order comes Fort Anthony, built by the Portuguese. It is about thirty miles east from Apollonia. Dix Cove is a British fort of importance, by reason of its convenient landing. About three miles from Dix Cove is Boutry, where the Dutch have a small fort; and nine miles further east is Taccorary, with a similar establishment. Four miles from Taccorary is Succondee, a Dutch fort. Next is Commenda, belonging to England.

Elmina is the most respectable and formidable possession in this district of territory. It was built by the Portuguese in 1481, and conquered by the Dutch in 1637. Quite a large trade is carried on there. Cape Coast Castle and Acra are the only remaining towns worthy of note. They are both places of consequence, and are regular stopping places for the ships of all nations visiting the coast. They are held by Great Britain.

This brings us to the Bight of Benin. All along this section of the coast slaves are shipped. Lagos was a widely known mart until its visitation by British men-of-war last December; when the usurping king was displaced, and the old sovereign, who is opposed to the slave trade, placed in possession. In this region resides the notorious king of Dahomey, whose port of outlet is Whydah. Great efforts have been made by the English government to induce the king to cease his connection with the detestable traffic, and to teach him that agriculture and commerce are more useful and advantageous than the stealing and selling of men, women, and children. With this object, Messrs Duncan, Cruikshank, Winniett, Forbes, and Becroft were sent, and have seen and conversed with him. By the latter he sent a letter to the Queen of England, one extract from which will show the measure of his capacity to judge of the motives that induce the people of Christendom to interfere in breaking up the slave trade:

"The King of Dahomey presents his best compliments to the Queen of England. The presents which she has sent him are very acceptable, and are good for his face. When Governor Winniett visited the king, the king told him that he must consult his people before he could give a final answer about the slave trade. He cannot see that he and his people can do without it. It is from the slave trade that he derives his principal revenue. This he has explained in a long palaver to Mr Cruikshank. He begs the Queen of England to put a stop to the slave trade everywhere else, *and allow him to continue it.* The king begs the queen to make a law that no ships be allowed to trade at any place near his dominions lower down the coast than Whydah, *as by means of trading vessels the people are getting rich, and resisting his authority.* He hopes the queen will send him some good Tower guns and blunderbusses, and plenty of them, to enable him to make war."

Well informed parties estimate that at least eight thousand slaves

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are annually shipped from Whydah, and the receipt of the king in head money at 300,000 dollars a year!

In the Bight of Biafra the slave trade has been entirely extinguished. This portion of the coast includes many notorious points. The River Bonny alone exported annually, until very recently, 15,000 slaves, while a large export also occurred from the old and the new Calabar, the Cameroons, and other rivers.

The trade appears to recommence immediately to the south of the Gaboon, which is just above the equator: and it is carried on along the whole coast from thence to about 13° south latitude. The principal points are,—Lopez, Mayumba, Loango, Kabenda, Congo, Ambriz, Loando, Quicombo, and Benguela. The sovereignty of this territory, covering a distance of about 1100 geographical miles, is claimed and exercised by Portugal. Several parts of it are occupied by them. The number of slaves shipped annually is uncertain, but they may be estimated by thousands. The facility from this part of the coast for shipment and escape is very great, as a large portion of the coast, rivers, and lagoons, run parallel with the sea. These waters may be considered the railways of Africa. By them slaves are transported from point to point, and shipped, not at fixed places, but as circumstances, generally the position of a cruiser or cruisers, may justify. Where this facility does not exist, the slaves are treated like post-horses, and run from spot to spot; the chiefs of the several tribes through which they pass, receive a gratuity, conditional on their rendering every assistance, and providing for their wants. Instances are known, when the markets being closed on the west coast, they have been carried to the east coast, a distance of 600, 700, or 800 miles, and *vice versâ*. Frequently they are shipped from the province of Mozambique on the eastern coast.

The slave, like any other marketable commodity, is chosen for his merits. The residents at Bahia prefer those from Lagos and Whydah for agricultural purposes; but as domestic servants they give the preference to those from the Bight of Biafra. The best tempered and most manageable are imported from the Congo.

The slavers are all sharp-built vessels, intended expressly for fast sailers. They mount commonly one gun, sometimes as many as eighteen. The one gun is a long 32 pounder; and, where there are more, some are always of this description. They are almost all of the *Baltimore build.* The way of procuring them is said to be the following:—mercantile houses in the Havana, and other ports in Cuba and Brazil, send orders for fast sailing vessels to their correspondents in the United States, of course saying nothing about their being designed for *slavers.* Even the *shackles* for securing the slaves, and the *gratings* to cover the hatches, not unfrequently go from this country; though a part of the latter are sometimes prepared on board. The shackles are put up in barrels and shipped as merchandise. The crews are principally Spanish and Portuguese, French and Dutch Creoles, and a sort of *Lingua Franca-men*, of no nation, or rather of all na-

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tions, belonging nowhere, or everywhere, and speaking all the *Atlantic* languages. Some of the crew are frequently Americans, who sometimes do not know the nature of the voyage until they arrive on the coast of Africa. The slaver sails from our ports as an American vessel, under the American flag, with American papers, and appears like a regular trader. She goes to the Havana or Rio Janeiro, is denationalized, receives a new name, and takes Spanish colours and papers, or Brazilian colours and papers. Sometimes, but rarely, this is done at the Cape de Verde Islands. These vessels frequently put into Sierra Leone; and, as all appears fair and smooth, and strictly regular, it is impossible to prove that they are slavers, although not a man in the place has the least doubt of it. Here they procure provisions and water as lawful traders. The captains always have plenty of money, and pay well for everything, and take care to give no offence. They are generally men of polished manners and gentlemanly appearance.

The demand for slaves is evidently as great now, as it has been for years. Cuba and Brazil are the principal foreign markets.

"In 1849, there arrived in the former, twenty vessels with 6,575 Africans. In 1850 seven vessels with 2,325; and in 1851 seven vessels with 3,687. These are matters of documentary evidence. During the same three years accurate investigation reveals an added number of 4,196; and, from the brig *Hanover*, built in New York, and delivered in Cuba last summer, 650 slaves were landed in the last week of February at Sierra Morena; and to the eastward of Sagua la Grande, by vessels not yet known, 800, making a grand total of 18,233 slaves imported into Cuba during the last three years."

We have no figures at hand showing the number entering Brazil. We may suppose it to be very large. Barracoons or depôts for their sale still exist at Cape Frio, Marambaia, Armacano, Mangaratiba, Rio de San Joano, Dios Rios, Rio das Ostras, Mambucabo, Macaha, Fazenda do Alegrete, Compos, Itabatinga, Manguinho, Sombrio, Puime, and Perreque. Indeed, Brazil not only allows her subjects to pursue this odious traffic without in any way endeavouring to interfere, but slave ships are permitted to this day to be armed, manned, fitted, and despatched to the coast of Africa for slaves, in broad day, and with the cognizance and permission of the Brazilian authorities, not only in the outposts, but under the eye of the imperial government, in the harbour of the capital of the empire! Occasionally a show of a desire to arrest the evil is made, and men of humble station are sent out of the country in virtue of the power vested in the executive government, yet the great and notorious offenders, those who are widely known to have amassed colossal fortunes by this infamous crime, are permitted to remain unmolested.

Often, when in consequence of information imparted to the government by a foreign legation, or by a foreign consul, or by a foreign naval officer, and which they must have infinitely better and surer means of obtaining—slave trading vessels are searched, and slave barracoons are inspected, it always happens that these proceedings are so delayed, and so conducted, that the slave traders have ample time

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to remove from their vessels all the fittings which constitute indications of slave trade, and to drive away from the barracoons the negroes who had therein been collected.

To return to our immediate subject, we may assert that the slave trade has been blotted out with a few trifling exceptions—save that continued by the king of Dahomey in the Bight of Benin—from the Cape de Verd Islands to the Equator, a distance of nearly 2,500 miles: and that to the south of the equator, its continuance is owing to the non establishment of communities such as Sierra Leone, the Republic of Liberia, the various forts maintained on the gold coast, and Cape Coast Castle; to the shorter period during which repressive measures have been tried; to the inadequacy of the force which has been employed in that quarter; and, in some degree, to the assistance derived from the connivance of certain of the authorities in the colonies of Portugal.

In destroying the African slave trade, the various squadrons on the coast have accomplished much. These were not sent there with the expectation that they could at once break up the deep rooted and long continued dealing in flesh and blood, or that they could exert any direct or efficient influence in promoting civilization or religion among the people of the interior. Its objects were to keep in check the evils which originated in the slave trade, and to afford protection to the colonies and missionary stations, till Christianity and civilization should shed forth their influence and raise the aborigines to a position of improvement, from which there could be no danger of relapsing into their former degradation. These noble purposes they have fully accomplished, while a powerful blow to the continuance and succession of the evil itself has been struck. This is apparent from the foregoing mentioned facts, as well as the subjoined table, taken from a return presented to the House of Commons, February 26th, 1850:

Year.	No. of Vessels captured.	No. of Vessels condemned.	No. of Slaves captured.
1840	79	76	3,192
1841	78	66	4,519
1842	58	53	3,177
1843	44	38	3,612
1844	52	46	3,472
1845	95	84	4,443
1846	47	45	2,200
1847	81	80	6,706
1848	91	90	6,712
Totals	625	578	38,033

Nor is this all. The squadrons have given encouragement to lawful trade by protecting it from piracy. This latter has been no small task, for there are at least a total of 200 sail of vessels, principally English, engaged in regular commercial transactions, and ten thousand whites residing on the coast or islands adjacent to the coast. This latter

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estimate includes the crews and officers of legally trading vessels and of the several squadrons.

The prospect also is, that legitimate trade will shortly be vastly increased; that of palm oil to one of the largest branches of trade in the world. How necessary then that an efficient and powerful force should be heartily sustained by Great Britain and the United States; nations whose mere commercial interests in that quarter of the globe require an enlargement of the present force, rather than the withdrawal of a single ship.

To render the several fleets effective and successful in capturing slavers, the swiftest and best vessels, instead of the dullest, should be selected, and these should be reinforced by swift steamers. Generally speaking, as before remarked, there are no established points for shipment. Information is given by neutrals and canoes to the vessel waiting off the coast, of the exact positions of each cruiser, and arrangements are then made for her further operations. The quantity of provisions and water carried by men-of-war is well known: and, if circumstances are not propitious, she waits off the coast until the cruiser is compelled to quit her station, then makes her point, and, in two hours, receives a full cargo. In the Bight of Benin, this precaution is often considered unnecessary. The trade from Whydah and some other ports is conducted by vessels in every way superior to the sloops of war; and the practice latterly has been to steer direct for their destination, ship their slaves, and take their chance, feeling sure that the probability of success is in their favour. In this they are often successful, actually running away from their interceptors and pursuers.* Need we be astonished at the risks run by men who thus bid defiance to the laws of God and man, for the sake of money, when we consider that if one slaver escapes out of five, a fair profit is secured to all concerned!

Much stress has been laid upon the conclusion of treaties with the native chiefs. As a means of forcibly destroying barracoons and factories, it is an important auxiliary, but no chief will enter into such an agreement who is interested in the traffic: therefore, in reality, but little good is obtained. The chief may quit the trade in dread of the consequences of violating his covenant, should he fear the return of the cruiser, or, as is generally the case, he merely ceases until the parties unto whom he has bound himself, are out of sight. Under these circumstances the trade might be suspended for years, and then renewed at a day's notice.

Legitimate commerce is recommended as a substitute, but, while the labour attending the cultivation and manufacture of palm and ground nut oil is comparatively trifling, and there is a speedy return, yet the natives cannot be induced to prepare these and cultivate coffee, sugar, and tobacco, for which the whole land is admirably adapted, when they can get a quicker and handsomer return on slaves.

In no other way, in our opinion, can the slave trade be effectually

* A full slaver, some two years since, came down the Congo river, and actually ran boldly past H.B.M. steamer *Pluto*, lying at its mouth.

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and for ever suppressed and Africa regenerated, than by planting communities of her exiled sons along her shores and in her interior parts. They thus become so many lights in the surrounding midnight darkness, and diffuse a knowledge of the arts and appliances of civilized and Christian life. By them, Christianity, agriculture, and commerce will take root and maintain their ground. Not only does it bless the returned African, but the natives, many of whom are, in the words of the Declaration of Independence of Liberia, "bowing down with us before the altar of the living God, declare that from us, feeble as we are, the light of Christianity has gone forth, while upon that curse of curses, the slave trade, a deadly blight has fallen, as far as our influence extends."

In support of this assertion of the people of Liberia, we shall cite the evidence of the distinguished Commodore Sir Charles Hotham, K.C.B., lately returned to England from the command of the British squadron on the west coast of Africa. We quote from his official despatches to the Admiralty, dated *Penelope*, St. Helena, April 7, 1847, and Cabenda, March 14, 1848.

"Before I conclude my observations on the northern part of the coast, I wish to call their Lordships' attention to the colony of Liberia. On perusing the correspondence of my predecessors, I found a great difference of opinion existing as to the views and objects of the settlers. Some even accusing the Governor of lending himself to the slave trade. After discussing the whole subject with officers and others best qualified to judge on the matter, I not only have satisfied my own mind that there is no reasonable cause for such a suspicion, but further, that this establishment merits all the support we can give it. Their views may or not tend to the increase of territory, but so long as they observe their present system of government, both humanity and civilization are interested in their progress: it is only through their means that we can hope to improve the African race."

* * * * * *

"I anxiously hope that Her Majesty's government may see fit to acknowledge their (Liberia) independence: there is much to recommend them to the most favourable considerations of the European world. Their institutions are founded on liberty and freedom: slavery, domestic or foreign, is not tolerated in any part of the republic. If countenanced and supported by England, they would prove our most valuable allies in the suppression of slavery. They can, by influence with the chiefs, and certain information of the movements of the tribes, effectually put it down, and I should feel entire confidence in their desire and ability to extinguish it."

[From the *Pensylvania Colonization Herald.*]

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Review of the History and Progress of a System of Permanently Fixed Lightning Conductors for H.M. Ships—from the Year 1820, when first proposed, to the present Year 1852, when fully adopted into the Public Service.—*By Sir W. Snow Harris, F.R.S.*

(Continued from page 365.)

43. The general adoption of the new system of permanently fixed conductors into the public service as being the only effectual security for H.M. ships from the destructive agency of atmospheric electricity, dates, as we have already observed, (27,) from June 1842, since which time the Royal Navy has been completely preserved from those terrible casualties by lightning so common in former years. For although the electrical discharge has repeatedly struck the ships in all its fury, yet no damage has ensued: the only cases of damage by lightning to H. M. ships of recent date, are a few solitary instances of vessels which, from some peculiar circumstances, were not fitted with the new conductors. It is rather to be regretted that complete details of all the various instances in which lightning has struck the ships of the Royal Navy having the new conductors, have not been generally recorded. In some instances the cases are very summarily noticed; in others they have been passed by as being of common occurrence; no damage having ensued. Nevertheless a great number of such cases are officially reported quite sufficient to prove the vast importance of the application, and its bearing on the national interests. About forty ships are known to have been preserved by the conductors in the heavy thunderstorms of foreign climates. These cases present to us a most valuable collection of facts derived from experiment upon the great scale of nature; and which completely set at rest all those disputed points relative to lightning rods, which for nearly a century have been made questions of severe, and often of bitter, philosophical controversy. Whether lightning rods attract the electrical agency? Whether they can be so applied as to afford complete security at all times and under all circumstances; and within what limits? Whether they may cause damage either by drawing from the clouds more electricity than they can transmit, or otherwise, by lateral explosions from their surface? Whether their pointed terminations either prevent altogether or greatly modify the fury of a stroke of lightning? All such questions will be now found to have received a complete solution; so that there can no longer remain any doubt upon such points. In fact, the new system of permanently fixed lightning conductors, so fully carried out in H.M. ships, embraces, in all their generalities, the great fundamental principles upon which such applications rest, (10,) and must therefore be considered as one of the greatest and most valuable experiments of its kind ever ventured on by any maritime conntry.

44. The following is a list of officially recorded cases of ships of

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the Royal Navy preserved, at various times, by the new conductors from the destructive agency of lightning in various parts of the world. We shall reserve for an appendix a brief summary of the attendant phenomena detailed in the same way, as in the history of those cases of ships struck and damaged by lightning not having conductors, and printed in the pages of the *Nautical Magazine* for the year 1843, and with which they will be found to present a marked and most important contrast.

Name of Ship.	Station.	Name of Ship.	Station.
Actæon .. 26	Central America	Hound .. 6	Coast of Africa
America .. 50	Corunna	Minden .. 74	Hong Kong
Asia .. 84	Lisbon	Pilot .. 18	Trincomalee
Albatross .. 16	Coast of Africa (twice struck)	Pandora .. 6 Racer .. 16	Rio de la Plata (twice struck)
Beagle .. 10	Rio de la Plata		
Beagle .. 10	South Australia	Rose .. 18	East Indies
Conway .. 28	Algoa Bay	Scylla .. 18	West Indies
Conway .. 28	Isle of France	Talbot .. 20	Sheerness
Constance .. 50	Coast of Mexico	Talbot .. 20	Rio
Childers .. 12	Canton	Tyne .. 26	—
Calliope .. 28	Sydney	Vixen steam frig.	West Indies
Druid .. 44	Rio	Volage .. 26	Cape de Gatt
Dryad .. 44	Coast of Africa	Waterwitch 10	Coast of Africa
Daphne .. 18	Monte Video	Ranger .. 18	Coast of Africa
Dido .. 18	Off Java	Rattler steam	Coast of Africa
Fisgard .. 42	Oregon	Race-horse 18	—
Fox .. 42	Colombo	Rolla .. 10	—
Fury steam frig.	—	Satellite .. 16	—
Favorite .. 18	—	Spitfire steam	—
Ganges .. 84	Mediterranean	Thunder .. 6	—

45. The question whether lightning conductors and other metallic substances especially invite the fury of the thunder-cloud, and draw down, as it were, destructive action upon ships, which otherwise would not ensue, is very satisfactorily determined by the phenomena observable in those instances of ships struck by lightning furnished with metallic conductors throughout the general fabric, and by the course of experience as compared with other ships of the Navy struck by lightning when such conductors were not present. We have already seen that the general system of lightning conductors has been more or less in use since the year 1830, at first in about ten of H.M. ships, and since 1842 throughout the whole Navy, which gives a clear course of experiment of at least twenty years. Now during this time the ships having the new conductors have, as appears by the preceding table, been exposed to lightning in its most appalling form in almost every part of the world:—In India, China, the Pacific, the West Indies, the coast of Africa,—in fact in every latitude and climate in which electrical discharges from the atmosphere are especially to be

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dreaded. Taking then a clear period of twenty years, viz., 1831 to 1851, we have not above forty recorded cases in which lightning has actually fallen on ships with explosive violence; that is to say, in which the ships have been what is commonly called "struck by lightning." We have had, it is true, a very great number of remarkable instances in which the conductors have carried off tranquilly, as it were, large streams of atmospheric electricity, and so far parried, probably the dense explosions incidental to the presence of a thunder-cloud; but the cases in which ships have been actually struck by lightning, may be considered as limited to about forty. In no case has any ill consequence ensued.

46. If we now take a similar period for ships not fitted with such conductors, viz., from 1822 to 1842, that is up to the date at which the general system was fully adopted into the public service, and which includes ten years common to each period, we find by reference to the official records of ships of H.M. navy struck by lightning, printed in the pages of the *Nautical Magazine* for 1843, that at least sixty ships were struck by lightning within that same period of twenty years, being nearly one-third the average number of ships annually at sea; and in every instance destructive damage ensued, and in very many cases to a frightful extent.

It appears, therefore, from this analysis, that ships ***not furnished with*** the new system of lightning conductors, have been struck by lightning more frequently than ships ***having such*** conductors, in the proportion of 3 : 2, a result quite conclusive of the question, "Whether such conductors operate in attracting lightning to the ship."

47. Taking the ten years, from about 1831 to 1842, common to the two periods of twenty years which we have selected, we find that during these ten years some ships were fitted with the general system of metallic conductors, and some not; and that both classes were on service together. We have hence a farther and most important source of evidence upon the merits of this interesting question relative to lightning, so frequently and critically discussed upon abstract theoretical views and individual opinion. Now the following table includes a list of ships, not having the conductors, known to have been struck and damaged by lightning, in various parts of the world, within this period; together with the number of ships fitted with the permanent conductors in their spars and hull, and employed on the same stations during the same period, but in which no damage ensued. Of these last ships, 33 in number, not above 7 were actually struck by the electric discharge, although every one of them, as appears by the ships' logs, were frequently exposed to heavy lightning storms.*

* The same ship is occasionally found in both columns, from the circumstance of having been subsequently fitted with the new conductors, after having been struck and damaged by lightning.

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Station.	Ships not fitted with Conductors. Struck by Lightning and damaged.	Ships having the Conductors. Not damaged.
Mediterranean.	Ocean, 80 Gloucester, 74, twice Racer, 16 Melville, 74 Madagascar, 46 Mosquito, 10 Wasp, 18 Rodney, 92 Powerful, 84 Tyne, 28 Scorpion, 10 Tribune, 24 Blazer, steamer Ceylon, receiving ship Gorgon, steam ship	Caledonia, 120 Asia, 84 Argyle, 24 Revenge, 76 Rodney, 92 Actæon, 28
East Indies.	Tamar, 26 Hyacinth, twice Raleigh, 18 Endymion, 46 Harrier, 18 Starling, surveying vessel Zebra, 18	Cornwallis, 74 Minden, 74 Agincourt, 74 Talbot, 28 Wolf, 18
North America and West Indies.	Racehorse, 18 Racer, 16 Gannet, 18 Snake, 16 Reynard, 6 Pique, 36 Royal Oak, receiving ship Ariadne, 28	Blanche, 46 Forte, 44 Sapphire, 28 Tweed, 20 Scylla, 18 Orestes, 18 Resistance and Crocodile, both troop ships
South America.	Racer, 16 Racehorse, 16	Spartiate, 74 Malabar, 74 Dublin, 50 Druid, 46 Actæon, 28 Daphne, 18 Fly, 18 Beagle, 10 Bramble, 10
Coast of Africa, and Cape of Good Hope.	Medina, 20, twice Columbine, 16 Lynx, 3 Pelican, 18 Primrose, 18 Athol, 28 Buzzard, 3 Tamar, 26	Southampton, 52 Dryad, 42
Channel and General Service.	Southampton, 50 Dispatch, 18 Pelican, 18 Russell, 74 Scorpion, 18	St. Vincent, 120 Wasp, 18 Erebus and Thunder, surveying vessels

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This table is more particularly conclusive, from the circumstance of its involving the same ship, both with and without the new conductors. It will be seen that in the Mediterranean alone, no less than five sail of the line were struck and damaged by lightning; whilst in the ships fitted with the new conductors, on the same station, no damage whatever arose.

48. Besides this general evidence upon the question whether metallic conductors operate in drawing down lightning upon ships, we find some especial cases directly bearing upon it highly deserving attention. It appears by official records, that in March, 1840, the *Asia*, 84, and *Powerful*, 80, two of the ships included in the preceding table, were moored near each other in Vourla Bay, in the Mediterranean, the *Asia* being fitted with metallic conductors in her spars, the *Powerful* not so fitted, but unprovided with any means of continuous metallic conductors along her spars to the sea. Under these circumstances both ships were exposed to a heavy thunder-cloud, which overshadowed the surrounding sea. Now it happened that instead of lightning falling on the *Asia*, that is to say, the ship in which the supposed attractors were present, it struck with destructive violence upon the *Powerful*, not having any conductors; the fore-top-gallant-mast was shivered in pieces, the fore-topmast rendered unserviceable, and the foremast severely damaged. The *Asia*, on the other hand, escaped all damage, probably by the action of the conductors in rapidly dispersing the atmospheric electricity which overspread the ship. This case, therefore, presents to us a great natural experiment, which would, if possible, have been especially selected for determining the merits of the question under consideration.

49. On examining other records relative to ships of the navy fitted with the new conductors, and exposed at the same time to thunder-storms in common with other vessels, not having such conductors, we find the following important instances:

H.M. ship *Minden*, 74, was exposed to severe thunder and lightning at Hong Kong in August, 1842, during a typhoon; two flashes struck the mainmast. The electric fluid played about the conductors, which conveyed away a fearful stream of electrical fire, attended by a loud whizzing noise. At this time the electrical discharge fell on a large merchant ship; the *John Barry*, near the *Minden*, and shivered her foremast in pieces; several other merchant ships in the vicinity were also struck, and four men killed.

H.M. ship *Fox*, 42, was struck by a severe flash of lightning at Colombo, in the East Indies, April 5th, 1847, which was carried off without damage by the conductors. At the same instant nearly a merchant ship, the *Bittern*, near the *Fox*, was also struck, and much damaged.

H.M. *Southampton*, during her last period of service in South America, 1850 to 1851, experienced many severe storms of thunder and lightning. Whilst off Monte Video a tremendous discharge of electricity fell one morning on the mainmast, about 5 A.M., which was transmitted without damage by the conductors. At the same time

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several merchant ships without conductors, in company with the *Southampton*, were struck by lightning and severely damaged.

We may add to these instances a recent occurrence at Plymouth, of a no less interesting character. On Wednesday, July 7, at 2 P.M., a heavy thunder-storm passed over Devonport and Hamoaze. The electrical discharge fell with explosive violence on the masts of H.M. ship *St. George*, 120, but no damage ensued; the shock was severely felt in the ship. The masts of H.M. ships *Sanspareil*, 90 guns, and *Impregnable*, 98, (the flag ship,) were also sensibly affected by the presence of the dense thunder-clouds which overspread the harbour. At this instant forked lightning fell on a small yacht of 15 tons, belonging to Lieut. Hawkins, of the *Impregnable*, and moored within a hundred yards of the ship; the discharge shivered her topmast, and did other damage. A great number of marked cases of this character might be adduced in support of the principles we have already expounded, (6,) and which must set the mind most completely at rest upon the question of any danger arising from the presence of efficient lightning conductors in ships. In fact, when we consider that lightning strikes trees, rocks, and buildings of all kinds indiscriminately, and even the ground near them, we are compelled, upon every sound principle of the inductive philosophy, to discard the doctrine of "specific attraction" in metals for the matter of lightning, and we must admit the futility of this vulgar objection to the use of lightning conductors generally. That such conductors "provoke the shaft of heaven," is the suggestion of superstition rather than of science.

[The remainder of this important article is unavoidably deferred for our next.]

ATTACK ON THE CITY OF BASSEIN.

Commodore George R. Lambert, R.N., Secretary to the Government of India.

Her Majesty's ship *Fox's* boat, at Bassein, May 20, 1852.

SIR,—I request you may be pleased to inform the Governor General of India in Council that the Lieutenant General commanding the Forces having communicated his wish to make an attack on the city of Bassein, I placed a squadron of four steamers at his disposal for this service.

On the morning of the 17th inst., Lieutenant General Godwin, C.B., the Commander of the Forces, embarked in the squadron with 400 of Her Majesty's 51st regiment, 300 of the 9th regiment Madras Native Infantry, 60 Sappers and Miners, the Royal Marines, and a detachment of seamen with a field gun from H.M.S. *Fox*.

I left the naval force at Rangoon in charge of Commander Tarleton with the *Fox*, and went with my boat to the *Tenasserim*, in which steamer I hoisted my broad pendant, and put to sea at two o'clock in the afternoon with the steamers named in the inclosure marked A.

The Lieutenant General accompanied me in the *Tenasserim*.

On the evening of the 18th we anchored off the island of Negrais, at the entrance of the Bassein river, where the *Pluto* joined us. I had sent her on from Rangoon a day previously, as her small power could not have enabled her to keep up with the steam frigates.

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At daylight on the 19th the squadron weighed and proceeded up the river, the *Pluto*, from her light draught, being ahead, showing the soundings. The *Tenasserim* led, followed by the *Sesostris* and *Moozuffer*, at half a cable's length distant.

At a few minutes after four o'clock in the afternoon the fortifications of Bassein appeared in sight, consisting of a very extensive mud fort, and a long line of stockade on the left bank, on which the city stands, and a strong stockade round the pagoda, with a brick parapet fronting the river. Then in an admirable position on the right bank stood a very large stockade, mounting several cannon. The enemy permitted the squadron to approach unmolested. At half-past four, when abreast the stockade, I made the signal to anchor. Immediately afterwards Lieutenant General Godwin expressed his wish to land the troops, which was effected, in perfect order, in a very short period. They had scarcely formed, under the Lieutenant General's direction, when a heavy fire was opened, both with cannon and musketry, from the various stockades, which was instantly answered by a cheer from the party landed, who stormed and carried the pagoda.

As soon as the enemy commenced firing, the ships opened their fire on the different batteries.

Observing the stockade opposite the town had been silenced, I directed Commander Campbell, of the *Sesostris*, to land with the boats of his own ship, and the *Moozuffer's*, and to storm it, which he effected in gallant style, driving the Burmese from their guns with considerable loss to them in killed and wounded.

Commander Campbell has called my special attention to the zeal and activity displayed on this occasion by Lieutenants Robinson and Lewis, of the Indian navy.

At half-past five I had the satisfaction of hearing that the last and most formidable of the stockades had been carried, but not without considerable loss on our part, from the great resistance shown by the enemy.

Amongst those I have to enumerate as sufferers on this occasion, I have to name Lieutenant George W. Rice, of H.M.S. *Fox*, who received a severe and painful wound through the right hand, whilst gallantly leading his party of seamen into the stockade.

I feel it my duty also to mention the steady conduct of the Royal Marines, under the command of First Lieutenant John Elliott, and I cannot conclude without expressing my best thanks to Commanders Campbell and Hewett, of the Indian navy, for the skill and ability with which they brought their ships up a river which had hitherto been but imperfectly surveyed, for a distance of more than sixty miles; nor can I refrain from expressing how much I am indebted to Commanders Dicey and Burbank, of the Bengal Marines, for the assistance I received from them, and I attribute our being able to perform this service without accident, to the careful and judicious manner with which the Commander of the *Pluto* went in advance, and communicated the soundings.

I cannot forbear bringing to his Lordship's notice Mr. Francis Duncan, second officer of the *Tenasserim*; he was by the side of Lieut. Rice when he was wounded; and in storming the stockade his conduct was most gallant.

The most perfect unanimity prevailed between the two services.

GEORGE R. LAMBERT, Commodore.

THE NEW MAIL SERVICE TO THE WEST COAST OF AFRICA.

THE contract for a direct steam communication by screw vessels with the coast of Africa, entered into in January last, by Mr. Macgregor Laird of Fenchurch-street, specifies that Mr. Laird shall convey mails, at the rate of not less than

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eight knots an hour, once each way, every calendar month, between England and Fernando Po, by at least three steam vessels, with screw propellers, and with engines of *minimum* power of 220 horses, the vessel being of a construction and strength able to carry and fire such an armament as the Admiralty may deem requisite. All the steamers employed in the service are to touch at Madeira, Teneriffe, Goree, Bathurst, Sierra Leone, Monrovia, Cape Coast Castle, Accra, Whydah, Badagry, Lagos, Bonny, Old Calabar, and Cameroons on their outward passages, and Lagos, Badagry, Whydah, Accra, Cape Coast Castle, Monrovia, Sierra Leone, Bathurst, Goree, Teneriffe, and Madeira, on their homeward passages, carrying and receiving mails that are to be delivered or received at the various places. One of the vessels is to put to sea from Plymouth, or Liverpool, or Portsmouth, as may be hereafter determined by the Admiralty, once every month after the 31st of August next, at an appointed time, with mails, and is to proceed to Fernando Po, touching at the intermediate ports; and another vessel once every month after the 31st of September next, from Fernando Po, with mails for Plymouth, or other such English ports to be hereafter determined, touching at the intermediate places.

There are clauses in the contract authorising the Admiralty to alter the port of embarkation, and the day and hour of departure and arrival of vessels at all the places, on three months' notice; and, with the consent of the contractor, to order the vessels to stop at other ports and deliver mails. An officer, or other person appointed by the Admiralty, is to be received on board as agent of the Admiralty, with authority to require the due execution of the contract, and to determine as to proceeding to sea or putting into harbour, or as to the necessity of stopping to assist vessels in distress. There are clauses with respect to the reception, accommodation, and victualling of naval officers, non-commissioned officers, engineers, soldiers of Artillery, and Sappers and Miners, as Admiralty passengers, for whom no charge is to be made by the contractor; and, even when not Admiralty passengers, officers in her Majestys' service are in all cases to be provided with passages in preference to private persons, and not to be charged more than those entitled to a passage at the public expense. Small packages, containing astronomical instruments, charts, medicines, wearing apparel, or other articles, are to be received on board as directed by the Admiralty or their officers, and conveyed to their destinations free of charge; and naval and other stores are to be conveyed and delivered at rates for private goods at never more than £3 per ton, as long notice as possible being previously given to the contractor that such stores would be required to be sent. For the faithful performance of the service the contractor is to receive, for the first year, £23,250; second, £22,750; third, £22,250; fourth, £21,750; fifth, £21,250; sixth, £20,750; seventh, £20,250; eighth, £19,750; ninth, £19,250; tenth, £18,750; and for every subsequent year of the continuance of the contract, there is to be an annual reduction of £500 from the rate of the year immediately preceding.

The payments are to be made quarterly, the first to become due at the termination of three calendar months from the 1st of September next, at which time the service is appointed to commence. It is to continue for ten years; and if at the expiration of that term neither party shall have given notice that the contract will then cease, it will continue in force until the expiration of a twelvemonth's notice in writing.

A further agreement was entered into between Mr. Laird and the Admiralty, on the 3rd of March last, for the performance of an additional mail service, exclusive of that to Fernando Po. On the expiration of any twelve months' notice which may be given by the Commissioners, the contractor is to provide an additional steam-vessel to proceed once yearly from the United Kingdom up one or more navigable rivers on the western coast of Africa, stopping and

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returning as directed by the Admiralty, the passengers to be provided for as under the previous contract. In consideration for this additional service, the contractor is to be paid 4s. a mile for every mile the vessel may proceed as required by the Admiralty.

The Eastern Steam Navigation Company.

At the adjourned meeting of the shareholders of the Eastern Steam Navigation Company on the 12th July, a bold and adventurous proposition was made to the meeting on the part of the directors, and which, if it can be realised, will introduce a new feature in the history of trans-Atlantic Steam Navigation.

The report that was read to the meeting suggested the possibility of making the voyage to Calcutta direct, *via* the Cape of Good Hope, in a shorter time than it is now made by the overland route, which it was stated required at present thirty-five days under the most favourable circumstances; whereas it was thought practicable by the directors to perform the entire distance by sea in from twenty-eight to thirty-two days. This was to be effected by the construction of steamers which would be propelled at the rate of from fifteen to seventeen knots an hour: and therefore it will be seen, that the success of the experiment depends upon this rate of speed being accomplished. If nothing more were to be gained than the saving of two or three days' time on a voyage to Calcutta, perhaps the experiment would be scarcely worth hazarding. The directors, however, expect to achieve more than this: with a most commendable spirit of independence, they wish to sail their vessels without the traminels that would necessarily result from a government subsidy. This would be one object gained, and a very important one for the country, and, perhaps, for the Company also: it would be altogether unconnected with the steamers of the Austrian Lloyd's Company. Again, it is proposed that these new steamers should be of a very large tonnage, to enable them to carry coals for the entire voyage, as well as a large amount of freight, to be charged at the same rate that goods are now paid for in sailing vessels. This alone would be a great benefit to our merchants engaged in the trade with India, although we must admit it might prove seriously damaging to those shipowners who have built and fitted out so many splendid ships exclusively for this trade. Furthermore, it is stated that a large number of passengers could be carried by these vessels, at about half the expence which the overland route now costs them. Setting economy aside, it would be a great convenience to many passengers, particularly where there is a family of children, if they could be at once *housed* in England for the entire voyage, and have no shifting until they arrived at Calcutta. The resolve to withdraw, if possible, "from the timid dependence on the bounty system," as the report expresses it, is one worthy of the Company, and entitles it to every support which the public can give it.

In these extraordinary days of science and invention, it would be hazardous to say what may not be accomplished by steam power; nevertheless we cannot avoid expressing some doubt that a Calcutta voyage can be accomplished at the average speed required to realise the plan of the Eastern Steam Navigation Company. Without wishing to be too critical, we would say that to give a range of "from fifteen to seventeen knots an hour," as an average rate for such a long voyage, is dealing rather loosely with a calculation which would require a nearer approximation to accuracy. We admit that four days are allowed to cover any unavoidable delay arising from the state of the weather, and in this way to meet the difference between fifteen and seventeen knots; but, taking an *average* of sixteen knots, it is clear to us that, consi-

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dering the whole chances of such a voyage, the steamer, under favourable circumstances, would require to be propelled at a speed of twenty knots an hour. We shall be rejoiced should it turn out that the science of steam-ship building has reached such perfection as to accomplish this, and we should be extremely sorry that any observations of ours should damp the energy of those who have resolved to make so noble an experiment.—*Shipping Gazette.*

The Search for Sir John Franklin.

Commander Inglefield, in a letter to the *Times*, says:—"The *Isabel*, screw schooner, of about 170 tons and 30 horse power, has been supplied to me with provisions for five years by Lady Franklin and the subscribers to Beatson's expedition. I accept her, with the understanding she is my vessel, and that all risk, expense, and responsibility, is with me. I purpose sailing on or about the 1st July;—[she left Peterhead on the 10th;]—proceeding up Baffins Bay as far as Smiths and Jones Sound, (if practicable,) and returning down the west coast of Baffins Bay and Labrador, examining thoroughly those shores. I hope to complete the voyage this season."

The opinion we first expressed of the expeditions of Lieut. Pym and Mr Beatson appears to have been tolerably well founded. Every one knows the end of the first, and here is the end of the second. From the foregoing modest announcement of Capt. Inglefield, we anticipate more than from all the expeditions which have yet left this country with the same object, and we shall look with anxious expectation for the result of his examination in connection with the fact of the two ships seen in the ice, and all the circumstances connected with them, as stated in our May number.

Nautical Notices.

Loss of the Tyrian on Elizabeth Reef, Australia.

On the 16th September, 1851, the barque *Tyrian*, of London, under my command, sailed from Honolulu in Woahoo, Sandwich Islands, bound to Auckland, in New Zealand, and Sydney, with about one hundred tons of general cargo, and seventeen passengers. Continued my passage to the southward, with fine weather. On the 8th October we made the westernmost of the Navigator Islands, and ran round the north end; and at noon were in latitude 13° 21′ south, longitude 172° 2′ west, with the south point S.S.E. seven or eight miles. We kept our course to the southward so as to pass between the Friendly and Feejee Islands; and on the 12th passed the meridian of Turtle Island, in lat. 19° 48′ south, long. 178° 38′ west. On the 27th, after a continuation of variable winds and unsettled weather, we made the great barrier at the entrance of Auckland, and run up between the islands; at 5h. A.M., came to anchor in Commercial Bay, with the town of Auckland bearing south one mile. Here we landed a few packages of cargo, took on board fourteen more passengers, some fresh stock, and filled up the water; and on the 6th November, sailed with the winds variable. Rounded the north end of New Zealand on the 11th, with unsettled weather. On the 20th the weather set in with strong winds from the southwest, and got round to north in hard squalls; continued heavy weather to the 24th, at noon of which day Pyramid

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bore W.b.N.½N. 22 to 24 miles, and Mount Gower, in Lord Howes Island, W.N.W. 12 to 14 leagues; the ship's lat. 32° 2′ south, long. 159° 39′ east. On the 24th strong winds from S.W., which moderated at 4 A.M., and at noon to a calm: lat. acc. 30° 31′ S., long. 158° 52 E.; lat. obs. 30° 4′ S., long. by chron. 159° 7′ E. When the ship's position was marked on the chart, found Elizabeth Reef bearing west eight miles: sent a man to the masthead: saw breakers about one point on the port bow as far as the eye could reach bearing west. At 1h. P.M., breakers were supposed to be seen ahead from aloft; but it being calm, and the sun strong, rendered it uncertain; but from the position of the *Rosetta Joseph* lying high on the reef, she would have been seen before the breakers. The ship continued with her head N.W.b.W. until 4h. P.M., a light air sprung up from the westward, and we got her head round to the southward, hauled the tacks down, and made all plain sail on the starboard tack; and at midnight we were going eight knots S.S.W.½W. On the reckoning being brought up to midnight, the ship was in lat. 30° 39′ S., long. 158° 27′ E. At ten minutes before one o'clock, the captain having previously left the deck in charge of the first officer, with a fine breeze, a clear night, and smooth sea, ship going about eight knots, the ship run on Elizabeth Reef, with so much way on, that she turned the coral up on each side for about 150 feet, and had five feet at the bow, twelve feet under the stern, and eight feet under the bilges;—and a succession of rollers made her surge heavy on her port side.

Finding there was no possibility of getting an anchor carried through the surf, and that little chance remained of the ship ever getting afloat, this being the day of new moon, as she dried forward at low water, after a consultation with Capt. Birkenshaw, Capt. Sprags, and Mr. Wilks, and the first officer, it was arranged that the long boat should be fitted with a wash cloth fixed round the boat to stanchions secured to the gunwales, and put into the best possible condition to enable her to start off for Sydney for assistance.

On the 25th the boat was ready, with as much water and provisions as they could safely carry. On the morning of the 26th left the ship in charge of Capt. Birkenshaw, well experienced in the colonial trade, Capt. Sprags, Mr. Wilks, one seaman, two ladies, three children, three men passengers, with the first mate and two seamen belonging to the ship, for Sydney, a distance of 450 miles. On the 2nd December, after a stormy passage, they arrived at Newcastle all safe, where the crew and passengers took the steam packet, and arrived at Sydney the same evening. On the wreck being reported to the government, orders were given to the commander of H.M.S.V. *Acheron*, to proceed to her.

As soon as the long boat left the ship, the captain with eight of the crew and twenty-one passengers, who remained on board, unbent the sails, and struck the topgallant masts, sending the rigging down. The ship having worked herself on the reef into a complete dock, kept her stern to the sea. The surf being heavy at half flood, beat the port side with heavy surges, and made a clean breach over the stern, straining the ship so much, that the pump had to be kept going to keep the water from the cieling. We continued getting masts and rigging down to ease the ship as much as possible; but the water in her increased daily.

On the 30th we made out a sail standing towards the reef, and in the afternoon she hove about and lowered two boats down, which, after a heavy two hours' pull, reached us. She proved to be the *Jane*, whaler, of Sydney, Capt. Brazier. The boat took seventeen passengers, and intended to return the following morning to the wreck; but when morning came it was blowing from the south-east, and no *Jane* was in sight. The ship was now surging heavily, the port covering board broken, and the deck much up amidships. She was making so much water, that the crew and four remaining passengers

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kept at the pumps night and day, the sea making a clean breach over the stern. The cabin dark lights were all stove in, and the rollers sweeping all before them in the cabin. Finding my men exhausted at the pumps, and the water gaining on us, we got as many of the dry goods out of the after hold as possible, and stowed them on deck and between decks with a few bags of sugar and flour; then returned to the pumps, to keep as much water out of the ship as possible, which was straining, and the hold beams all working from side to side. On the 4th the ship was full of water, washing up to the hold beams; four hundred bags of sugar, four hundred of flour, and one hundred and five boxes of tea, belonging to Mr. Nathan; with two hundred and forty bags of sugar, Mr. Robinson's; one hundred and ninety-three bags of sugar, Watkins and Deans; all covered in the hold with water, and many other packages of cargo.

On the 5th we made out a vessel standing to the south-west, which in the evening hauled towards the wreck, and came under the starboard side, where the sea was not so heavy. This was the ketch *Æolus*, Capt. Cox, from the Feejee Islands, bound to Sydney. Captain Cox was very ill; the boat was in charge of a Mr. Wright, who had lost his vessel in the Feejee Islands: this vessel took four remaining passengers, and three of the seamen deserted the ship. We sent by her bread, flour, sugar, tea, and coffee, some wine, and a few bottles of porter for Capt. Cox, with three mail-bags, and one parcel from the Auckland Bank to the Union Bank, Sydney. At 6 P M., the *Æolus* bore away for Sydney, and I was now left with Mr. Humphries, two seamen, and two boys on the wreck. From the 6th to the 8th it continued with strong winds from the north, and continual heavy rollers kept straining the ship; her hold beam stanchions all down, beams all adrift, main deck up, and every appearance of the ship giving way. Still she remained with her stern to the surf, which continued heavy.

On the 9th at 6, A M., the rollers became heavier, the ship twisting and moving about in her bed. At 7, the port bottom gave way, the ballast, flour, sugar, provisions, and bales, water-casks, and all floating packages, went through the bottom. The wreck now turned her broadside to the reef, and laid on it. Cut away the main and mizen masts, which fell across the reef; the sea took the boat from the bowsprit, and knocked her to pieces; the sea making a clean breach over the ship, and rollers through the bottom. The crew lashed themselves to the weather stanchions on the poop. At 9, the tide falling, the ship easier, and rollers not so heavy. At 9 30, observed the smoke of a steamer to the westward, hauling round towards the wreck; and when within four or five miles of us, she lowered a whale-boat down, with eight men and an officer, who had come from H.M. steamer *Acheron*. They pulled into the entrance of the reef, and launched the boat over an inner ridge, and came up the lagoon inside the reef to within about a cable's length of the ship, when two of our crew were sent from the wreck to her, with a request for assistance to remove two valuable packages then on the deck. The instructions of the commander, and the difficulty of getting the boat over a reef of sand, made it impossible to take any article; and as signal was made by the *Acheron* to leave the wreck immediately, we got into the boat, and pulled along the inner edge of the reef. All hands got out and launched the boat over a reef of coral, and we then passed through the entrance. A second whale-boat from the steamer was met on our return; and in half an hour we were on board the *Acheron*. After steaming an hour and a half to the northward, the fires were banked up, and the vessel lay by under fore and aft sails, so as to be in a good position for the wreck in the morning.

We shaped a course anxiously for the reef on the following morning, without seeing it, especially as the *Rosetta Jesop* was lying a wreck on it, and would be visible at the distance of ten miles in so clear a morning. But we

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continued our course until noon, when the altitude gave the lat. 29° 34′ S., long. 159° 24′ E.; which lay the steamer nineteen miles north, and fifteen east of the reef, showing that we had been set by a strong current. In consequence of this current, Commander Hathwait, finding there was only three days coal on board, and little prospect of saving any thing from the wreck, gave orders to make the best of the way to Sydney, which was done, and we arrived there on the 13th, and landed the four remaining crew.

Having remained by the wreck for fifteen days, I will endeavour to give a description of this dangerous reef, the only account of which I had from Horsburgh Directory. It appears to have been seen by the ships *Claudine* and *Marquis of Hastings*, and stated to lay in lat. 30° 5′ S, long. 159° 00′ E., to be of a quadrangular form, three miles in circuit, and the east side of the reef extending about N.N.E. and S.S.W. one mile; but the greatest extent is from W.N.W. to E.S.E. By good observations where the *Tyrian* wreck lay on the reef, I made the lat. 29° 56′ S., long. 159° 7′ E. The *Rosetta Joseph* wreck bearing by compass west six miles, which gave that ship's lying in lat. 29° 55′ S., and in long 159° 0′ E. From the position of the *Tyrian*, the north-east point of the reef, E.b.S.½S. by compass distance one and a half mile, from this point the reef trends round to the south and by west for about seven or eight miles, and then round to the westward and northward towards the wreck of the *Rosetta Joseph* six or seven miles, from the *Rosetta Joseph* to the northern extremity of the reef about three miles; from this point of the reef the *Tyrian* bears E.S.E. six or seven miles, making a circuit round the reef about twenty-four miles.

At about two miles from where the *Tyrian* lies, in a W.N.W. direction, there is an entrance into the reef a quarter of a mile wide, with deep water; but it narrows as you get it. At this entrance H.M. ship *Acheron's* boat passed, and pulled up the lagoon inside of the outer reef.

This is an extensive lagoon, having apparently about two or three feet water in it at low springs. We had but little to spare in pulling the whale-boat from the wreck; it was then dead low water, and the reef dry, so that the crew stepped from the boat on the reef. At low water neap tides there is about three feet water on the reef, and not a dry spot to be seen; nothing but a dreary foam of breakers all round the outside of the reef.

Since the trade has been opened between the colonies and California, the *Rosetta Joseph* and the *Tyrian* have been wrecked on it. There have been besides some narrow escapes, arising from strong currents, more particularly during the full and change of the moon In the south-west part of the lagoon are several patches of coral; and at the last quarter ebb at spring tides, in a fine calm day, they loom high; but at half flood nothing is to be seen but a sheet of water throughout the lagoon, surrounded by breakers. During the time that I remained on the reef, I frequently observed the distance from which the breakers could be seen by night; when very high, this was about two miles, but when moderate, not more than one mile. It is high water at full and change at twelve o'clock, and rises nine feet at the highest tide.

The reef abounds with fish; many we caught were of fine quality; and it also swarms with sharks.

THOS. ROBINSON,
Late Master of the barque Tyrian of London.

The *Acheron* steam vessel had been set in an E.N.E. direction by the current in the vicinity of the reef thirty-seven miles in sixteen hours while on the east side of it; and W.N.W. twelve miles in ten hours on the western side; which leads me to infer that this was the cause of the loss of the *Tyrian*. By good observations made on board, I place the north part of the reef in latitude 29° 50′ S., longitude 158° 59′ 45″ E.; eastern extreme, lat. 29° 53′

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45″ S., long. 159° 4′ 45″ E The reef extends in an E.S.E. and W.N.W. direction for at least fifteen miles, and six to eight miles north and south.

(Signed) NAPOLEON SEWIL,
Master of H.M. steam vessel Acheron.

On the 16th December the *Jane* arrived at Sydney, when I called upon Capt. Brazier; he said, after taking my passengers on board, and boats hoisted up, he made sail to keep his ship in a position for the wreck in the morning; but when daylight appeared neither the wreck nor the reef was in sight. When the altitude was taken at noon, found the ship thirty-two miles to the westward of the reef, and for eight days endeavoured to make the reef, and obliged at last to bear up for the coast. I mention this to show how vessels may be hove out of their reckoning by this unknown current.

The lead is of little use, as there is deep water up to the breakers all round the reef.

SUNKEN ROCK OFF BROWNS ISLAND, AUCKLAND, NEW ZEALAND.

NOTICE TO MARINERS.—*To the Editor of the Southern Cross.* Sir,—Perhaps you will have the goodness to notify through your paper the existence of a rock hitherto unknown in the direct track of vessels sailing through Waikeki passage. I hope, however, that the government will not lose any time in having a buoy placed upon it; but in the interim your noticing it might be of service. The *Iliomama* struck on the rock at 1 P.M. of the 10th ultimo, and remained fast for two hours exactly; it was quite low water when she went on, and the flood tide took her off with I hope a very slight damage She was drawing 10 feet 6 inches, and on the rock there was only 9 feet water. The rock bears nearly N.W. of Browns Island, and is about a third of the passage across towards the island from Rangitoto, so that vessels should keep well off from the Rangitoto shore. The schooner was running out of the harbour with a fine wind at the time she struck. Your obedient servant,

J. S. MACFARLANE.

We republish the following notice from the *Government Gazette* referring to the rock on which the *Iliomama* struck. "Notice to Mariners.—A sunken rock, between Browns Island and Rangitoto, about a quarter of a mile from the latter, should be avoided by vessels taking the Waikeki passage. A temporary buoy has been placed on the same. Magnetic bearings: From southern extreme of Motutapa, S.W.¼S.; centre of Browns Island, N.W.¼N.; and Peak of Rangitoto, S.E.b.E¼E. Isaac J. Burgess, Acting Harbour Master."—*New Zealander, Nov.* 19.

SUNKEN ROCK OFF CAPE ITAPACOROYA, COAST OF BRAZIL.

LIEUT. R. H. DALTON, commanding H.M. S. V. *Rifleman*, has reported the position of a sunken rock off Point Itapacoroya, at the entrance of the anchorage of Armaçao, awash at low water. Its greatest length is about 30 feet north and south, with the following compass bearings:—

Point Itapacoroya	S.S.W.½W.
A small bluff Point, north of Itapacoroya about 500 yards	S.W.¼W. 1 mile
Island Feya	N.W.b W.½W.

This island is a good guide for vessels entering or leaving the anchorage of Armaçao: keeping the island open off Armaçao Point, will lead to a good berth to the southward of the rock.

There is from 5 to 7½ fathoms within twenty yards around it. Between the rock and Point Itapacoroya the depths are 6, 6½, 7, and 8 fathoms mud, within fifty yards of the Point.

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BATAVIA.—The Netherland government has advertised the following notice. With the view of preventing those accidents which arise from the ignorance of pilots concerning measures adopted by the Netherland government in the East Indies, for the purpose of warning vessels of dangers at certain seasons, and particularly during the whole of the westerly monsoon, in entering and leaving the canal at Batavia, the following notice has been published by order of the Minister of the Netherland government in the journals of Java:

"When the surf at the jetty is so heavy as to render dangerous the entrance or departure of ships from the canal, a white flag will be hoisted, not only on the Observatory, but also at the mizen-mast head of the guard-ship of the port of Batavia, and also at the palace of Weltereden. Besides which Marryatt's signal, No. 5081, will also be hoisted at the said Observatory.

"It is expressly recommended to the commanders of ships to give the necessary orders to their officers, not to send any boat away to land, either at the jetty or in any other part of the bay, when the above signals are flying."

TRIAL OF ANCHORS OF ALL NATIONS.—The late trial of anchors on *dry ground* at Sheerness, we consider to be of so little importance, that we cannot find space for it. A good account of it appeared in the *United Service Gazette*, and a graphic illustration of the mode adopted, will be found in the *London Illustrated News* of the same date. The second series of experiments, which took place on the beach of the Garrison Point at Sheerness on the 23rd inst., is somewhat more interesting to the readers of the *Nautical*, the proceedings of which, as well as that to take place at the Nore, will be duly preserved by us.

NEW BOOKS.

A DESCRIPTION OF ISLANDS IN THE WESTERN PACIFIC OCEAN, *North and South of the Equator; with Sailing Directions. Together with their Productions, Manners and Customs of the Natives, and Vocabularies of their various Languages. By Andrew Cheyne.*—J. D. Potter, 31, Poultry.

IN this little unpretending volume we have abundant proof of the advantage of making notes and observations in parts of the world little known, and embodying them with other information concerning the same places, for the benefit of society at large. Captain Cheyne has here shown himself in the light of an intelligent commander, and a well-educated gentleman for the station which he holds, who, having learnt the value of such information as he has here thrown together, has done good service to his brother officers by giving them the results of his observation in a distant part of the world, that is destined shortly to become more prominent than it has been in the annals of our intercourse with foreign parts. True, he may have culled a leaf here and there from the *Nautical*, to which he has himself been a good contributor, and to which he is therefore justly entitled; but on such new ground, and with the wants of seamen, before him he has produced a volume which can be opened nowhere without yielding desirable information.

There is some good advice, as well as information, in the following extract relating to

THE EDDYSTONE ISLAND, NEW GEORGIA.—The Eddystone Island is of small extent, elevated 1036 feet on its west side, and situated in lat. 8° 18′ S., long 156° 30′ 40″ E. A small low island lies off its south-east side, connected to it by a shallow bar at each end of the channel, with deep water between. It

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has a small harbour on its north-west side, formed by reefs with a snug cove, nearly land-locked, at its head. A vessel can moor to the trees, in the cove, where she will be completely sheltered from all winds, and lie as safe as in a dock. I visited this island in 1844, in the brig *Naiad*, and lay in this harbour for six weeks, collecting sulphur and trading for tortoise-shell and biche de mer; while there I made a plan of it. I was there in the months of February and March, and we experienced very bad weather during the greater part of our stay; indeed for the four last weeks of it, we had nothing but a continuance of north-west gales, with violent squalls, and thick hazy weather. I found three runaway sailors living on it, who had been on shore for some time; and as they had acquired a considerable knowledge of the language during their stay, I found them useful as interpreters, and got a deal of information from them with regard to the general character of the natives of New Georgia.

The Eddystone island is of volcanic formation. It is well wooded but very rocky, and mountainous on its west side; and all its southern shore is characterised by high rocky cliffs, generally inaccessible. On its south-west part, a large quantity of sulphur might be easily collected, which the natives would carry down in baskets to the stony beach, and it could be brought round to the cove in boats in fine weather. Two or three tons might be collected daily. It is found near the surface, intermixed with clay, about half way up the hill, on the top of which is the crater of an extinct volcano. The ground is quite hot in the vicinity of the sulphur, and steam issues through the fissures of the rocks in some places. I also observed several hot springs near the beach.

The soil of the Eddystone is either very indifferent, or the natives pay little attention to its cultivation, as its vegetable productions are of a very inferior quality. The cultivated plants and trees are, cocoa-nut, bread-fruit, bananas, sugar-cane, betel-nut and sweet potatoes. The latter is largely cultivated, but they seldom grow to any size, and are of a very indifferent quality.

Although this island, and the greater part of New Georgia, cannot furnish any supplies (except cocoa-nuts) for the refreshment of whalers, yet I know of no islands in the Pacific where so much tortoise-shell can be procured. Whalers usually get from one and a half to three pounds of shell from the natives for a small hatchet or tomahawk; and from personal experience, I believe that a person well acquainted in the trade, with an assortment of *suitable* goods on board, might procure in three or four months, (by making the circuit of the islands in the proper season,) fully two thousand four hundred pounds of tortoise-shell. The reefs around New Georgia, and the eastern part of New Guinea, produce biche de mer of the first quality; and sandal-wood has been seen on an island not very far from the Eddystone. Pearl oysters of a large size, are also to be found in abundance on the reefs. Excellent ginger grows on all the islands of this Archipelago. The Eddystone island, although appearing insignificant as regards trade, on comparison with the neighbouring islands, must, on account of its natives being on friendly terms with Europeans, (which their neighbours are not,) become the channel of communication with the larger islands of New Georgia, and strangers should procure pilots and interpreters at the Eddystone, before going to any of the other islands, as the charts in use at present are utterly useless, and likely to run a stranger into danger, if he steers by them. New Georgia consists *of a number of islands*, with wide channels amongst them, whereas it is laid down in the chart as *one large island*. The Eddystone natives are well acquainted with these, as they often go upwards of a hundred miles from home, in their large canoes, on war expeditions.

The goods most suitable for New Georgia, are axes, adzes, tomahawks, blue cloth, calico, small beads of all colours, cheap straw hats, knives, chisels, fish-hooks, gimblets, looking-glasses, boxes, &c.; and at the Eddystone, in addition to the above, muskets, flints, cartouch-boxes, gunpowder, and lead.

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The Eddystone natives, and those of New Georgia generally, are in stature rather below the middle size. Their complexion is quite black, and their hair similar in appearance to that of the African negroes; yet they have nothing of the negro cast of countenance about them, but resemble more the Papuans of New Guinea in their general appearance.

Both sexes are fond of ornamenting their persons with necklaces and belts, composed of small glass beads, tastefully braided on a string. The chiefs and great warriors wear a number of rings on each arm, made from a gigantic cockle found on the reefs. These rings are so highly prized, and so difficult to be obtained, as often to occasion war between the different tribes; and human life is considered of so little value by the natives of this archipelago, that one of these rings can command the head of any individual; therefore those who have got them are possessed of much power, and are consequently much dreaded. These natives have the lobes of their ears perforated, and the males distend them to such an immense size, as to insert round blocks of painted wood more than three inches in diameter. When at war they paint their faces and breasts with some white pigment, which gives them a most horrible appearance. They all chew betel-nut, and their teeth are quite black in consequence. They use an aromatic leaf and lime as condiments, similar to the Malays.

With regard to the general character of the New Georgia natives, *nothing* can be said in their favour. They are, without exception, the most treacherous and blood-thirsty race in the Western Pacific, and most notorious for cannibalism. They are so addicted to the latter propensity at many of the islands, that human flesh actually forms their chief article of diet. I have been most disgusted, on visiting some of their houses, to observe human heads, arms, and legs, suspended from the rafters. At the time of my visit, the Eddystone natives had just returned from a war expedition, in which they had come off conquerors; and had brought home with them—including men, women, and children—no less than ninety-three human heads! On my first landing, I was horrified to observe those very heads hanging along the wall plates of their war-canoe house.

These natives are so treacherous and rapacious in their habits, that they have generally their houses built on the most inaccessible spots they can pick out, so as to guard against being taken by surprise in the night.

The canoes of this archipelago are well constructed, and carry from three to thirty men, according to size. They are built of thin boards, sewed together, and are timbered throughout their length. They are shaped something like a whale-boat, and are the swiftest canoes in the Pacific. The stem and stern-post of the war-canoes project upwards six or eight feet, and are decorated with shells and feathers. Some of them are inlaid with mother-of-pearl shells about the bow and stern. They have neither outrigger nor sail, but are propelled by paddles.

The Eddystone natives go sometimes as far as Murray's Island, in these canoes, on war expeditions.* The chiefs of New Georgia appear to possess very little authority, nor do the natives pay much respect to them. I had an instance of this while at the Eddystone. I gave the head chief a present on my arrival; but he was afraid to take it openly on shore, and came for it in the night unknown to his countrymen. He related many instances of chiefs having been poisoned by their dependents after having received presents from ships; and said his countrymen were in general so covetous, that they would murder any one, even their own friends, for the sake of obtaining a tomahawk, or a few pieces of iron hoop. The dress of the males consists of a slight covering of tappa tied round the loins; but that of the females is most ludicrous, and *indescribable*.

* Their arms consist of tomahawks, spears, clubs, shields made of rattans, and bows and arrows; the latter are poisoned.

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Sperm-whales frequent the shores of New Georgia, New Ireland, Malanta, and Bougainville's Island, during the months of October, November, December, and January; but it is hardly safe to chase them near the shores of Bouka, as the natives of that island have often attacked whale-boats when at a distance from their ship; therefore strangers lowering boats after whales, when near any of these islands, should be particularly on their guard, and have two or three muskets in each boat.

I shall now conclude these remarks with a few hints to strangers regarding the precautions to be observed when trading with these natives Although I have advised those who intend trading at New Georgia to procure pilots and interpreters at the Eddystone, yet I would by no means recommend strangers to put much confidence in their professions, nor to believe half what they say. They may do very well to point out where such a vessel anchored, or where tortoise-shell may be procured; but their knowledge of the harbours and shoals is very limited. If the weather is clear, no danger need be apprehended; as an experienced officer on the fore-topsail-yard can see all dangers, when the sun is not ahead. Nor would I advise a ship touching at the Eddystone to allow *any* natives on deck, except the two highest chiefs, whose names are Meno and Lobie When trading at the other islands, and before allowing any canoes alongside, heave your ship to with her head off shore. Then station your men around the vessel, at equal distances, well armed; and instruct them not to allow any natives on deck; at the same time caution them particularly not to point their muskets at them, for should they do so, you will in all probability receive a shower of poisoned arrows from the canoes. If possible, keep all the canoes under the stern; and allow no person but one of your officers to barter with them.

As the success of your voyage depends entirely on keeping on peaceable terms with the natives of the different islands you may visit, you should take care not to be the first aggressor. Therefore, take nothing from them without payment, not even a cocoa-nut, nor so much as a bundle of grass; and if they refuse to take the price you offer, return the article immediately. Should you anchor in any of the harbours of New Georgia, allow none of your crew liberty on shore, no matter how friendly the natives may appear, as there is always more or less danger attending it. Although a run on shore might conduce much to the health of the crew, yet it must be dispensed with at these islands. In trading with these natives, you will have to submit to many insults, and must be particularly careful not to strike or offend the chiefs—insignificant as they appear to be; for if you do so, the consequences may lead to bloodshed, the ruin of the voyage, and perhaps a general massacre of all on board.* The Eddystone is called by the natives Simbo.

ATLANTIC AND TRANSATLANTIC SKETCHES, *Afloat and Ashore. By Captain McKinnon, R.N., Author of Steam Warfare in the Parana.*—In 2 vols. Colburn, London.

A TOUR in the United States of America, and a visit to the remote settlements on the Lakes, form the fertile field of observation that has employed the pen of our author in these two volumes. Captain McKinnon is already favourably known to us as the author of "Steam Operations in the Parana," written in an off-hand, free, and amusing style. He sees everything with an unprejudiced eye, and inquires into everything with a tongue that could pick a lock, as he was once *agreeably* informed in our presence, a compliment which he did not fail to appreciate. And if he goes on picking the locks of knowledge and information as he has begun, in the works to which we have alluded, and giving

* Several vessels have been captured by the natives of this archipelago, and their whole crews massacred.

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them to us as he has done, he will be justly entitled to the credit of being a very useful, if not a very agreeable writer. The volumes before us abound with amusing remarks on New York, Baltimore, Washington, and Boston—the company, manners, and customs there—not omitting especially the several dockyards; and contrasts, favourable and unfavourable, between all he found there and all he left here, are as thick as seaweed in the Atlantic. But we must leave these to our readers for the present. We may hereafter find space for some of the remarks which they will find in these amusing volumes

ENGLISH YACHTS AND AMERICAN CLIPPERS.—On Friday evening the 4th instant, Mr. Scott Russell delivered a lecture before the members of the Royal Institution on English Yachts and American Clippers. England, he observed, wrapped up in her prejudices and relying upon tradition and experience, had been excelled in the art of ship-building by the Americans, who followed in this matter common sense and the laws of nature for their guides. He, however, believed it was only necessary for us to be assured of our present inferiority, to produce a stimulus that should result in placing us first in the competition. A premium under the old British law of tonnage had been held out to the construction of bad ships, and our yacht clubs adopting this law had increased the evil. The present, or new British law of tonnage, the lecturer considered totally free from the injustice of the previous law, and eminently calculated to beget an improved model of merchant ships. There was a time when speed need not be considered a necessary quality in merchant ships, which were held to be good in proportion to the amount of cargo they would stow away—with no reference to speed, and but little to safety. Now, however, since the discovery of gold at the antipodes, speed was more than ever an object, and therefore under the stimulus thus begotten, the lecturer predicted the building of ships within the next ten years very far exceeding in size and speed any we had already seen. Twenty miles an hour he believed would not be an extraordinary speed for the new race of vessels, and their length might amount to 500 feet. In point of fact, the langer a ship the safer, the swifter, the better was she, provided only her materials be strong enough to withstand the increased strain. By adopting iron instead of wood as ship-building material, this necessary degree of strength might be secured.

The total number of British ships built in 1849 was 1462, with tonnage 245,130; in 1850, 1439, with tonnage 262,483; in 1851 (exclusive of vessels built in the plantations, of which no return has been received), 702, with 152,653 tonnage.

It appears from a return to parliament that in 1841 the number of British vessels which had entered the port of London engaged in the foreign trade was 4,016 sailing and 626 steamers; and in 10 years—in 1851—the number was 5,190 sailing and 1,403 steamers; while of foreign vessels there were in 1841 1,927 sailing and 72 steamers; and last year the number had increased to 3,474 sailing and 274 steam vessels.

QUEEN ADELAIDE NAVAL FUND.—As announced in our June number, a grand fancy bazaar in aid of this fund (established for the relief of orphan daughters of officers of the Royal navy and marines) was held at the Royal Hospital, Greenwich, under the especial patronage of her Majesty the Queen, the Duchess of Gloucester, the Duchess of Kent, the Duchess of Cambridge, and many of the most distinguished members of the nobility. The event was evidently regarded in the town as one of unusual importance, and the approaches to the hospital were gaily decorated with flags and other ornaments appropriate to an exhibition of this nature; whilst the spacious quadrangle of the building was occupied by a very large concourse of people, amongst whom were many ladies of rank and distinction. The scene was one of considerable interest, and it seemed a matter of doubt whether the great attraction of the day was to be found in the promenade on the green sward, or in the interior

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of the building, where the important objects of the day's pleasure were more especially promoted. One entire wing of the hospital was devoted to the purposes of the bazaar, and although the space appeared somewhat limited, owing to the large influx of company, the effect was at once brilliant and picturesque. The stalls were presided over by the Marchioness of Hastings, the Viscountess Valentia, the Ladv Caroline Legge, Lady Mary Legge, Lady Ann Legge, the Hon. Lady Capel, Lady Adam, Lady Beaufort, Lady Hart, and other ladies of title distinguised for their devotion to charitable objects. Their ladyships discharged the duties imposed upon themselves with an amount of zeal and earnestness which would have done honour to many a "stall-keeper" whose object was to secure "custom" for a more exacting taskmaster than they were on this occasion called upon to serve. The various articles offered for sale were displayed to the best possible advantage, and their merits descanted upon with the most tempting elegance of language. The scene was enlivened by the joint exertions of the Royal Marines and the juvenile band of the Royal Hospital Schools, whose performances produced a most cheering and inspiriting effect, as the company promenaded the grounds within the precincts of the building. The result of the day's entertainment was very successful for the objects of the charity.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory. From the 21st of June, to the 20th of July, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter.		Strength.		Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
		In Dec.	In Dec	o	o	o	o						
21	M.	29·70	29·60	62	65	54	66	S	SW	2	5	od (2	qbc
22	Tu.	29 70	29 70	58	63	49	64	SW	SW	4	5	bc	qbcp (3
23	W.	29·74	29·77	62	67	50	68	SW	SW	2	3	bc	bc
24	Th.	30 01	30·05	62	68	49	69	W	W	2	3	bc	bc
25	F.	30 08	30 00	64	69	48	70	S	S	3	4	bc	bc
26	S.	29·76	29·77	57	67	45	69	S	S	2	2	or (1) (2	bcp (3)
27	Su.	29 91	29 87	55	64	52	65	SW	SW	3	3	op 2)	bcp (3
28	M.	29·81	29 85	62	64	52	66	SW	SW	5	5	qbc	qbc
29	Tu.	29·81	29·83	63	66	56	68	SW	SW	4	4	o	bc
30	W.	29·83	29 91	62	67	53	69	SW	SW	6	6	qbc	qbc
1	Th.	30·06	30·10	62	65	50	66	W	NW	4	4	bc	bc
2	F.	30·17	30·16	62	67	51	68	SW	SW	4	6	bc	qbc
3	S.	30·21	30·21	67	74	53	75	SW	SW	2	2	bcm	bcm
4	Su.	30·14	30·08	71	80	54	81	SE	S	1	3	b	b
5	M.	29·99	29·96	79	87	59	89	SE	S	1	3	bc	b
6	Tu.	29·90	29·91	76	84	66	86	NE	E	2	4	bm	b
7	W.	30·02	30·06	72	77	60	78	NE	NE	2	4	b	b
8	Th.	30·10	30·12	70	78	54	80	NE	E	2	2	b	bcm
9	F.	30 06	30·04	72	84	56	86	SE	SE	1	2	bc	bc
10	S.	30·12	30·16	72	78	62	80	NW	N	1	2	bm	bc
11	Su	30·22	30·18	66	78	55	79	N	NE	2	2	b	b
12	M.	30·16	30·14	65	75	58	76	NE	E	2	3	o	bc
13	Tu.	30·14	30·12	71	75	57	77	E	E	1	3	bc	bc
14	W.	30·05	30·05	72	76	60	78	NE	E	2	3	bc	bc
15	Th.	30·00	29 98	74	83	62	84	W	S	1	2	bc	bc
16	F.	29·97	29·91	73	81	63	82	E	E	1	2	bc	bctlr 4)
17	S.	29·82	29·82	68	76	66	78	SE	S	1	2	or (2)	bc
18	Su.	29 89	29·92	66	75	60	77	W	W	2	2	bc	bc
19	M.	30·00	30·03	67	76	55	76	S	S	1	2	bc	bc
20	Tu.	30 08	30 09	66	76	59	77	SW	SW	2	2	bc	o

June, 1852.—Mean height of the barometer = 29·716 inches; mean temperature = 56·3 degrees; depth of rain fallen = 4·54 inches.

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THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

SEPTEMBER, 1852.

On Arming the Mercantile Steam Marine; or, Embodying a Maritime Militia for the Preservation of the Country in the Event of a Sudden Declaration of War.—*By Kennett B. Martin, Master Mariner.*

Such was the proposition a short time before the dissolution of Parliament, and Mr Anderson, M.P., made the following trite and comprehensive remark:—"The advantages of his plan were, that it would not in the least interrupt our national commerce, and that the force to be thus created could never be used for aggressive purposes."

It is fair to ask, are the blue jackets (as in auld lang syne) to be placed, in time of need, in the van of their country's defensive armaments? After all the opinions as to manning the Navy, and the uselessness of the merchant seamen to that end, is Parliament requested to give them arms, and to make them the conservators of their country's liberties—let that pass! It is cheering to perceive, that the words of experience are appreciated, and were quoted in the House of Commons, upon that occasion. Let us reconsider them: his Grace the Lord Warden of the Cinque Ports had declared, "We have no defence, no hope of defence, excepting in our fleet; and if it be true that the exertions of the fleet alone are not sufficient, we are not safe for one week after a declaration of war."

Who can doubt this? Who, with a particle of common sense, does not perceive that the position of a kingdom must always determine

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what is its legitimate defence? Or, why has not Prussia a fleet? and why has Prussia such an imposing and effective standing army? Prussia is insulated by military states, and her circumvallation is a continued line of military frontier. *Au contraire*, Britain's empire,—itself, its colonies,—composed of numerous islands, all require the iron arm of naval power to preserve and protect them from foreign aggression. As a consequence, her maritime population is immense; their boyhood's pastime is in the roaring surf. It enters into their earliest associations; and they look upon that field of peril as their own;—a field where, to quote the poet's patriotic effusion,

> "A Drake once made her mistress of the deep
> And bore her name in thunder round the world!"

A field where they always expected and desired to contend, if necessary, with their country's foemen: and to arrest them in any attempt to violate the sanctity of that soil which for centuries has been preserved from the profanation of invading armies. And have we then resigned ourselves to the idea that ere long the miseries of war await us, and are really impending over our long protected hearths and altars? If for some wise purpose Almighty Justice has decreed the declension of a mighty empire! If He, in whose hands are the destinies of men and nations, should afflict our rulers with a judicial blindness, and prostrate our beloved country, her ships, her commerce, her colonies, and maritime supremacy, we must be resigned; and the next generation will become the citizens of an inferior power! Such has been the fate of nations, such may be ours! But let us hope and trust that although great indeed are our short-comings, yet are we not still the rallying point of civil and religious freedom? Is it not consistent with the dearest interests of humanity to believe that the fiat and beneficence of an overruling Providence had raised this island of skin-clad warriors to its present beautiful position among the nations as the sanctuary of all that is temporarily and spiritually valuable to man!—Let us then hope! And while we have faith in our country's cause, let us not neglect, or suffer to die out, her latent energies! Let us not be led astray by the Utopian idea, that a millenium of peace is at hand, while nine tenths of the human race are anti-christian, and thousands of our fellow countrymen regard with a divided allegiance the honours and interests of our father land. But, thanks to those ancestors who secured to us our liberties, our immediate frontier has few indeed among its people who halt between two opinions, and are always prepared to grapple with any sudden emergency. And why? Were they not always appealed to instanter when insulting nations let loose the dogs of war? Time will show. And let us now contemplate the means we at present possess to keep the marauder from our doors. And trust to Heaven to inspire the minds of our senators with wisdom, and the hearts of our people with loyalty and devotion to Queen and country.

Let us bear in mind, that if once we, as a nation, become weak, every puny beast will kick at the sick lion; and that meteor flag, so

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long the dread of the slaver and the pirate, will, in every distant sea, be treated with contemptuous insult. Let us consider, then, whether it would not be better policy to begin to fortify ourselves with our sailing ships. Let us consider the arena they occupy in distant voyages upon the chess-board of the world; and the terrific retaliation they could inflict, if properly equipped, upon any nation at present in existence who dared to threaten us with invasion. For, be it remembered, when Hannibal made an incursion into the Roman states, that skilful and warlike nation instantly sent their eagles to Carthage: and our sea eagles, if we do not clip their wings, would be still more excursive! Let us then suppose that every British merchant ship, above a given tonnage, was obliged to carry an armament; not the trumpery old guns we too often see, mounted upon rotten carriages, for mere show; one long tom upon a circle is worth a whole tier of them, especially with a well trained seaman gunner to give it effect. There was once an instance of a fleet of piratical Malay prahus retreating from a merchant ship, whose captain coolly singled out their chief for his victim with a rifle bullet. How much more telling, then, would have been the effect, if the pirate admiral's craft had been cut asunder at long range by a well directed shot!

Let every armed ship, then, carry an expert seaman gunner, to instruct the officers and crew. How could their time be better employed in running before the listless trade winds than in learning the noble art of self-defence under proper training, not only with artillery, but with small arms? I meet with men continually on board American merchantmen, who have been thus trained in our gunnery ships, and served their stated period upon a foreign station in our men-of-war. Surely it would be wise to secure their services to our own flag and country. We might then laugh at piratical attempts in or upon our distant colonies, and meet them by the combined action of our merchant ships. And this discipline might be achieved at a comparatively trifling expense to the nation. The seaman gunner thus borne upon the ship's books, might receive an annual bounty of Five Pounds, funded in his name, at saving's-bank interest, in the treasury of Greenwich Hospital, till his return from each voyage; this, in addition to his pay for the performance of all his duties on board as an able seaman, would, I believe, be found a sufficient inducement.

Such men, thus looking homeward for their reward, would be a check upon unruly spirits, would always be found by the side of the officers.

And now let us see and consider the check mate this great maritime country would give to any wild speculator in the desperate game of war. Be it remembered, we have colonies and courts of judicature in every region of the earth; and in whatever sea a ship was captured, we could proceed immediately to condemnation, by legalizing those colonial courts to carry into effect such powers immediately on the breaking out of a war. These are pieces on the chess-board which other nations do not possess, except in an infinitely inferior degree.

And the present march of science has incalculably increased all the

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powers of simultaneous action. Steam and electricity would re-echo the call to arms,—measured by minutes only in the three kingdoms, and only by days and weeks to distant colonies. Well, we have been told by a gallant officer, "That London might be invested before preparation could be made for effective defence." But he should in courtesy have proposed some plan of operations by which we might give our foes "a Rowland for their Oliver." But perhaps he believes that London invested England would be won! Forbid it, Heaven! The wealth of London would retreat faster than they could follow it; while its streets and squares would become a second Saragossa!

The first act would have barely commenced; and let the crown only make it law, that the moment a hostile force was concentrated for the invasion of England, and the fact avowed, that then every British armed merchant ship would become an authorised letter of marque and reprisal, and then the offending nation's commerce would be annihilated, and their trading vessels swept from the ocean at a blow. We have only to look back to the last American war for evidence of this. America had no navy. She had a few men-of-war, and nobly they acquitted themselves; but the nation armed! The nation arose as one man; and sending forth their letters of marque, they distressed our merchants, and carried away from us more prizes than we took from them with our splendid navy!

But the Peace Society would exclaim—oh! oh! that would be buccaneering! Granted: or, in other words, a maritime guerilla; equally justifiable with the proposed rifle corps or trained bands on shore. My ship is as much my castle and fortune as their freehold; and I should consider it also justifiable to engage in offensive warfare against any people, who, taking advantage of my absence on a distant voyage, had invaded my country, for the double purpose of enslaving me and depriving me of a home.

War is a national, not an individual affair; and the people who engage in it, especially the aggressors, must prepare themselves for all its visitations and sufferings as a people.

Standing thus on the defensive, Britain would have the vantage ground; and great would be the peril to that nation which attacked her single handed. This war of reprisals would enlist the sympathies of chivalric Englishmen now serving under the American flag, and their name is Legion. Nay, so close are the affinities of the Anglo-Saxon race, that nothing would prevent their mingling indirectly in the fray. Transfers of clipper ships would be quickly made in our western ports. The temptation would be irresistible. Manners, language, arms, and a kindred spirit, would prevent the possibility of distinguishing the sea rovers of the one country from the other. In this I am transcribing the opinions of many intelligent Americans in addition to my own. Such then, it appears to me, may be serious considerations for those enthusiasts on the Continent who dream of subjugating England by a *coup de main*. Paris and its marshals may be France; but London is not England.

Such, I believe, would be the effect of an easy line of policy com-

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menced in time. Our annals will show many a merchant ship, in the olden time, fighting in a style which would not disgrace the proudest navy in the world. If the present line of policy succeeds, our maritime supremacy is still secure. That is a question of time, and time only can decide.

But let us now attend to the direct proposition of Mr. Anderson, or the immediate defence of our coasts, by arming our mercantile steam marine. We have witnessed, in common with many others still living, the extraordinary defence made by the Norwegian and Danish gun boats, against the maritime chivalry of England. And the tactics with our armed steam Guarda Costas would be similar in effect. Taking up their position in and among the shoals and flats which girdle our coasts, and where vessels of heavier water draught could not approach them, they would advance and retire at pleasure. Independent of which, let us refer to what we have seen, and take a case in point,—a 64 gun ship, attacked by a squadron of one-gun boats. They spindled out into a single line, shifting with their oars at every discharge, while enveloped in the smoke; and the shot from the ship having to cover a widely extended space, and aimed at small objects, was at so vast a disadvantage, that they suffered but little from his fire; while he, as a single target of large dimensions, was hulled every shot, and lost upwards of fifty men in an incredibly short space of time; and but for a breeze springing up, the consequences might have been still more serious. There can be no doubt then of the power a steam flotilla would possess as a protection to our coasts*. In addition to which, the enemy's concentrated force must be blockaded by steam men-of-war, and truly they are formidable engines at long range; at close quarters I fear that both the combatants would be in flames in a very few minutes; for if we take into account that the midship section of these ships is like a lucifer match from the intense heat of the engine department, it would require almost superhuman energies to keep the fire under which might be caused by shell guns. Be that as it may, steam will and must be employed as blockading squadrons. We well remember the Boulogne flotilla and the encampment upon the hill. There the great desideratum with our squadron then was, to be always at their post; and if blown away to leeward, to beat back again to their position with all possible dispatch. Accordingly, our swiftest cruisers were always under way; under storm sails if necessary; and never was a more effectual blockade. A detachment of the fleet was always kept to windward; and by the time their lee drift had brought them abreast the blockaded port, in most cases the gale was over. Thus the encampment on the hill, the movements of the flotilla, and all the arrangements of the enemy, were strictly telegraphed as daily reconnoitred.

But a new feature will present itself to our naval armaments as relating to steam cruisers, especially if all our steam towing company's

* We possess a great advantage over other nations in the number of naval officers upon half pay, the elite of whom might be instantly commissioned into the steam flotilla, as they were into the hired armed service during the late war.

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vessels, our coasting steamers, and packets, are to be converted into Guarda Costas, or as sea fencibles, to watch against or contend with an advancing enemy.

Our sailing frigates and brigs, being provisioned and stored for months, kept the sea without difficulty. Their propelling power was not used up daily and hourly; and if partially disabled by the enemy's fire or the tempest, their crippled spars, split sails, and stranded ropes, were replaced; and the gallant ship was quickly again prepared for action; and whether under storm sail or flowing sheet, there they were, the untiring and vigilant guardians of their country's security and honour! But this cannot be the case to the same extent with steam warfare. You cannot, while under way upon the restless element, splice a sway beam or a cross head, or put an iron patch upon a boiler. Such vessels must inevitably repair to the nearest port, as is often the case now with steam vessels in distress, availing themselves of Ramsgate Harbour, where the smithy and forges of that establishment readily afford them the assistance they require.

But there is also another momentous question as regards the efficiency of a blockade squadron of steam men-of-war; and it is surprising that it escaped the acute perceptions of some or other of the honourable members representing the coal districts, for it was entirely overlooked in the parliamentary debate. They had not considered that a powerful steam armament, together with its auxiliary fleet, while destined for a night dash, or sudden attack, will remain quiescent in port, with merely a sufficient supply of fuel to cross the channel and return; but the British defensive squadron must to a great extent keep the sea, or open roadsteads, and be always prepared to meet them at a moment's warning. The question then naturally enough suggests itself,—"Where are they to coal?" Are they, with their present enormous consumption of fuel, to have a fleet of colliers in constant attendance upon them? Such a fleet would be worse than useless with any wind and swell on; and the expense of hired vessels would be enormous. How then? The greatest possible dispatch will be necessary to such a service; and there must be extensive coal depôts on shore. But where? The Cinque Ports and Harbours in the Narrow Seas, have been impoverished, neglected, and silted up; and there are those who assert that it is no matter. Harbours of refuge or supply are useless! But in the event of a sudden outbreak, they would bitterly repent these rash conclusions*!

* Instances were numberless of the daring success of the French privateering depredations upon our coasts. A Dieppe lugger was sunk, while attempting to board a merchant brig in Dover Roads, by a shot from the battery. More than a thousand officers of our mercantile marine, were in French prisons at the same time. Some of them had been taken out of the Downs anchorage from under the wings of their convoy. H.M. brig, *Bloodhound*, had a narrow escape; a lugger had dogged her through the Narrows, supposing her to be an armed merchantman; night came on as she reached the Downs anchorage. She brought up, and while the men were aloft furling sails, the lugger dashed alongside, and threw the boarders upon her deck. It required a desperate struggle to withstand this audacious attack. And these things should be remembered by those who fancy that Harbours of Refuge for merchant coasters and others may be dispensed with.

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well remembers the danger attending the passage through the Straits of Dover, from the enemy's privateers, spite of the imposing fleet which studded the Channel; and the many days, and often weeks, which elapsed while fleets of colliers, coasters, and others, crouded the harbours and roadsteads, waiting with their convoy the advent of a fair wind.

But surely it requires no argument to prove the strong auxiliary arm of national defence which efficient harbours ever have been in time of war. The battle of the Nile would not have been fought but for the facility afforded to Lord Nelson at Naples for refitting his fleet. And it would be fair, as respects the present position of the two greatest naval powers upon earth, to put the still closer question, "Which of the ports or principal havens on the neighbouring shores, have been lost to its navy since the Norman invasion?" Then look at Cherbourg, and all the inferior ports right and left of that magnificent naval station, and blush for our own country ever boasting of its naval superiority; and yet, with an unaccountable apathy, taking away the resources which should support and improve its havens and harbours, and suffering many of them to be irrecoverably and hopelessly lost! and this same people adorn their chief city with the finest and most expensive bridges in the world; erect a House of Commons unrivalled in magnificence, and build, as if by magic, a Temple of Crystal, to display their wealth and advancement in the arts and sciences, and to excite the admiration and envy of surrounding nations! It is indeed passing strange, that amid all this luxury, wealth, and power, that warning voice, so soon to pass away from a heedless generation, appears to be unheard! That prophetic warning, again and again presented to them by the literature and press of their country:—"We have no defence, no hope of defence, excepting in our fleet. And if it be true that the exertions of the fleet alone are not sufficient, we are not safe for one week after a declaration of war. WELLINGTON."

May a grateful nation appreciate in time this admonition of its venerable and patriotic warrior! and it will, under God's blessing, be still preserved from the miseries of war!

[There is much for deep consideration in Capt. Martin's paper. His remarks on the subject of our harbours are to the purpose, as well as his observations on supplying our steamers with coal; but the training of our merchant seamen in gunnery, however desirable, is easier to propose than to accomplish. Now, however, that the *invasion panic!* is gone by, which certain writers and Editors of newspapers thought fit, for *reasons of their own*, to magnify and encourage (for such persons must have something to talk about); now that all this is gone by, we may copy the following extract from a reported speech of M. Cormenin at the Peace Congress, in which there is much good sense. But all this serves for amusement. We have always laughed at the *invasion* idea as chimerical, and as often speculated whether it would be most polite for our Navy to convoy the dreaded flotilla to our shores, or stay at home to receive it with due honours! But we are getting political for once, and shall finish our reveries with M. Cormenin's observations.]

Never had France less strength, less justice, fewer pretexts, less need, less interest, less of public consent, less union, less money, less

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will, less impulse to make an aggression against her neighbours, than she has at this moment. But, also, never would she have had more right, power, cohesion, resources, courage, and invincible unanimity to repel an unjust attack.

This is the spirit of France—this her position, and we know it, or ought to know it, I think, a little better than a good many folks beyond the Rhine, or on the chalky side of the Channel, who really do not know anything at all about us.

For my own part, gentlemen, in the course of my political existence, I have, I confess, witnessed a few very out of the way things; so much so, that, at the present moment, I can scarcely believe that I have seen them. I have seen Napoleon, more to frighten than to hurt you, flotillaing it at Boulogne. I have seen Louis the Eighteenth surprised and carried off, him and his kingdom, by eighty-four grenadiers from the island of Elba, with muskets reversed. I have seen the urchins of Paris smash the regal crown of France between two paving stones. I have seen bronzed heroes of Africa in comfortable cotton nightcaps, just as they jumped out of bed, clapped into a hackney coach by hectors of the police. After that, I think, and I am willing to admit, there is nothing that is impossible and that may not be believed without hesitation or with too much credulity, without leaving much to imagination. My morning paper of the day would inform me that the Pope has beaten the Austrians out of Ancona, and is advancing, at the head of his cardinals, to lay siege to Vienna; or that Kossuth is returning to his Hungary laden with dollars and backed by Yankees. I should say, "Hum! Well, certainly, that's strong; indeed, that's coming it very strong; but it is possible, for the thing has been done, that is, something very like it."

But for us as Frenchmen, at this moment, involved as we are, for us to run ourselves aground, by overloading ourselves with five hundred millions more; for us to equip five hundred boats, more or less flat bottomed; to embark on board of them a small handful of men, say forty thousand; to land them at Dover, and march them straight upon London; assuredly that would be by far the most bankruptlike and most monstrous folly of all the follies I have ever yet seen. For the English to believe it, too, is on their part even yet more foolish than anything. What! afraid of our forty thousand freshly disembarked landsmen! Why this goes beyond all that one can possibly imagine. Imagine, for a moment, all the peers and the doughty knights and baronets of the three United Kingdoms of England, Ireland and Scotland, headed by F.M. the Duke, the iron duke, taking fright in the midst of their twenty-three millions of men, trembling with fear and bolting like so many nervous curs, with their bob-tails between their legs, before our forty thousand halberdiers! No! Old England, the first power in the world, the Queen of the Ocean, the classic land of bombs and congreve rockets, the foster-mother of guineas and bank notes, which are the sinews of war; no, she cannot surely tremble, fall back, turn pale, and cast herself on her knees before forty thousand men, even were every man of them a hero; even though they should be French conscripts taken scarcely a year since from the plough-tail,

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or out of our shops. Why, to allow such mischievous panics to break out and make head, shows that the English government can have but very little faith in the soundness of its institutions, in the immensity of its resources, in the confidence of its citizens, in the union, the energy, the patriotism, the enthusiasm of its sons. I blush for England, and for very shame hide my face. I behold with pain, with pity, a nation that I love, and that I glorify, lowering herself to such a degree of humiliation and weakness. I feel that England cannot decline to this point in the esteem of the world, even from fear of us, without damaging us likewise in our communion with her, and without affording the partisans of absolute power a glorious opportunity of attributing to the enervating rule of free institutions the necessity for such extravagant precautions being taken, even though they be but the embodiment of a morbid imagination, and of blaming it for the cowardly prostration of mind and body into which the English nation has fallen.

No! Thank heaven! No! We have not, on our part, been condemned by our temperament, nor by our legislatures, nor by our press, to such inexcusable and nameless frights. Our frontiers, by land and sea, are free, are open; anybody may cross them, may invade our territory. We shall be found there. And, reversing the hypothesis, if the English should take it into their heads to march upon Paris, not with forty thousand men, as they assume it is our intention to try to do upon London, but with a hundred thousand of their picked troops, if they have them, we forewarn you that, in order to leave them a clear field, we will withdraw, that is, if my advice should be taken, our army to the further side of the Loire; we will keep wide open the breaches in our ramparts and our fortifications, and, single-handed, with only the roused populations of Artois, Normandy, the Isle of France, Burgundy, the Orleanais, and Champagne, we will receive you, gentlemen, at the foot of the heights of Montmartre as it would become honest men and true to do; not forgetting to inform you, that, after the first shock, of all your men at arms there would scarcely remain a few to speed back and announce the shame of their great defeat to your parliament and your dandies.

Do likewise, gentlemen. Do as we would. Have full confidence in yourselves, in your strong arms, and in your stout hearts, and snap your fingers at France—aye, and even at all Europe.

But let us leave these hypotheses and fancies. Let us leave governments and parliaments to retrograde and trail themselves in the miry ways of the past, instead of taking the lead at the head of the peoples, proud of, and confident in, the future. If they do not carry us along with them in advance, as it is their duty to do, why then we must bear them forward with us, according to our desire. We will teach them, (alas! too many of their class know them not,) we will repeat to them, those holy maxims, those gentle words of union and fraternity, which the gospel announced eighteen centuries ago to all the peoples of the earth by the mouth of the Saviour of men.

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Review of the History and Progress of a System of Permanently Fixed Lightning Conductors for H.M. Ships—from the Year 1820, when first proposed, to the present Year 1852, when fully adopted into the Public Service.—*By Sir W. Snow Harris, F.R.S.*

(Continued from page 442.)

50. Some phenomena attendant on the experience of the new conductors in the Navy, remain yet to be noticed; which, in relation to this branch of science, are particularly worthy of attention; and which still confirm the view already taken of the action of lightning conductors in parrying the effects of the electrical discharge (6).

On the 30th of June, 1842, H.M.S. *Southampton*, was exposed to a violent thunderstorm on the coast of South America; and although having the new conductors in all her spars, with pointed metallic spindles aloft, yet the electrical discharge struck the sea near the ship in various places. One discharge fell so near the ship, that it appeared to strike under the main chains.

It is worth while to notice in reference to this fact, a similar result of atmospheric electrical action, noticed in the logs of the *Arab*, 22, so long since as the year 1799, and *Bellette*, 18, in 1822. The log of the *Arab* describes the electrical discharges:—"Thunderbolts flying about the ship, two or three of which fell into the water within a cable's length of the ship." Capt. Leath, who commanded the *Bellette*, describes the audible effects of the several electrical discharges on the sea, as "similar to the whizzing of musket-balls." Both these vessels were eventually struck by lightning and severely damaged. In the latter, no less than thirty-six men were struck down whilst hauling in the head braces. It is to be further observed, that these ships were unprovided with lightning conductors; yet the phenomena of the electrical discharge on the sea, did not vary from those attendant on the case of the *Southampton* just quoted, with the exception that the latter ship escaped altogether,—a very remarkable and conclusive fact.

The following cases of lightning falling on spars, without metallic conductors attached to them, and the subsequent preservation derived from such conductors, are also most important facts.

It appears that H.M.S. *Conway*, 28, was struck by a flash of lightning in March, 1846, whilst under refit in the Isle of France. The ship was fitted with the new conductors; but the topgallant mast being on deck, a temporary spar was set up from the main topmast-cross-trees as a pendant staff, so that no metallic-pointed rod was in this case present. The following entry appears in the ship's log:—"11 45, A.M., the pendant staff at maintopmast head was shivered in pieces by lightning, Harris's conductors carrying off the fluid without further damage."

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In May, 1847, H.M.S. *Dido*, 18, was struck by lightning at daybreak, off Java Head, whilst under sail. The electrical discharge fell aloft on the mainmast in a divided forked stream; a branch discharge struck obliquely upon the main royal yardarm, shivered the yard, and destroyed the sail, which was furled at the time. From the instant, however, the lightning reached the conductor on the mast, the explosive action vanished, and the whole shock was transmitted without damage to the sea." The great fact to be noticed in this case is, that the pointed metallic conductor at the head of the royal mast did not prevent the minor branch of the forked discharge from seizing on the yard which had no protecting conductor attached to it. The yard without any conductor, therefore, was equally open in this case to the course of lightning as the royal mast which had a conductor. Such facts, as we shall presently see, are most important in reference to the question as to the limits within which lightning rods may be supposed to afford protection.

It may not be unimportant to place these two cases in connection with an interesting electrical statement by the Count de Forben, given in the 48th volume of the "Philosophical Transactions,"—"In the night," says the author, "it was extremely dark, and it thundered and lightened dreadfully; we saw, upon different parts of the ship, above thirty St. Elmo's fires; amongst the rest there was one upon the top of the vane of the mainmast more than a foot and a half in height. I ordered one of the sailors to lower the vane and come down; but scarcely had he taken the vane from its place, when the fire fixed itself on the head of the mainmast, from which it was impossible to remove it." Here then we have a case from observation, long before the question arose relative to the attractive influence of metallic conductors for the matter of lightning, proving, as is evident, that the mast of a ship is just as likely to be assailed by atmospheric electricity without as with a pointed metallic termination in the air; which, in common with the preceding cases, also proves, and in accordance with the principles already laid down, (6,) that lightning falls on all bodies indiscriminately, subject only to certain laws of resistance. If metallic bodies be present, and in a position to facilitate the passage of the electrical agency, they may certainly be first assailed, but not otherwise. If not present, the electrical discharge will find a path through the next best conductors, and no human power can prevent it. Any assumed repulsion of electricity supposed to arise from placing balls of glass or other non-conductors on the masts of ships, is a perfect fallacy; such bodies cannot possibly have the least appreciable value in resisting an agency such as lightning; the action of which, depending on some thousands of acres, perhaps, of electrical clouds, is so overwhelming as to break through a thousand feet or more of dense air, certainly the most perfect if not the most compact of insulating bodies.

51. We shall conclude this part of our subject with brief notices of some interesting cases of ships of H.M. Navy, having the new con-

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ductors, struck by lightning, as compared with other similar cases in former years, in which no such conductors were present.

The recent case of H.M.S. *Calliope*, 20, struck by lightning on her passage from Hobart Town to Sydney, in July, 1851, furnishes a marked and striking contrast with the case of the *Albacore*, 20, struck by lightning in the West Indies, in August, 1798. Capt. Sir Everard Home, commanding the *Calliope*, says in his letter to the Admiralty, "On the 16th July, H.M.S. *Calliope*, under my command, when on her passage from Hobart Town to Sydney, was, at 6 P.M., struck by lightning. The fluid struck the copper spindle at the main-royal-masthead, which it slightly fused, passed down the mast, and went out by the conductors on both sides of the ship; that on the starboard side through the midshipmen's berth." "I was in the fore cabin at the time; the door was shut, and was made aware of what had happened by seeing a mass of fire, as it seemed, in the fore part of the cabin, accompanied by an explosion as loud as if the gun nearest the cabin-door had been fired. The whole was instantaneous. I ran below into the midshipmen's berth, where I could neither see the slightest effect of what had taken place, nor was any smell of fire to be discovered. The lightning passed out of the ship on each side, and the copper covering the bolts on the outside was driven from the ship's side. The mast is uninjured."

Not the least damage arose in this case. The following statement by the chaplain of the ship, cannot be read without much interest. In a letter dated "*Calliope* at sea, July 19, 1851," he says, "Whilst sitting in the gun room, we were startled by a blaze of light, and a most terrific explosion, as loud as the report of a 64-pounder. We had been struck by lightning. Fortunately the mainmast-conductor had received the shock, and the electric fluid passed clean through the ship. But for the conductor the *Calliope* must have been shattered in pieces; even after the explosion our fears did not subside. The pumps were rigged, and a strict search made; but the conductor had done its work effectually."

Let us now compare, if only for an instant, the history of this case with that of the *Albacore*, sloop, a similar ship, struck by lightning in the West Indies in 1798. Here it is not a little singular and worthy of remark, that Capt. White, in command of the ship, writes, in describing the phenomena at first, in almost the same terms as Capt. Sir Everard Home, although an interval of above half a century intervened between the two cases. Capt. White says, "Whilst sitting in my cabin, between four and five in the afternoon, a sudden light glared round the mainmast, attended by a tremendous crash." Here, however, the parallel description no longer obtains. Capt. White continues thus:—"I ran on deck, and found the mainmast shivered by lightning, and the topmast and topgallantmast totally destroyed, the mainsail on fire, and the mainmast rent down to the quarter-deck." The ship, it further appears, was completely disabled, and was obliged to proceed to Port Royal for refit.

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It is presumed that no doubt can possibly arise, in comparing these cases, as to the preservation of the *Calliope* by the new conductors. The two cases are singularly similar in every respect, except as to the result. Both vessels being of the same class, both struck by lightning whilst under sail, and about the same hour of the evening.

The case of the *Fisgard*, so well described in the *Nautical Magazine* for May last, is again a most interesting instance of the preservation of H.M. ships by the new conductors. The ship, it appears, was moored at the mouth of the Nisqually River in the Oregon territory. On the evening of the 26th September, 1846, heavy thunder-clouds were observed in the distance, with vivid lightning, which speedily covered the ship. At 7h. 45m. a terrific discharge fell on the mainmast. Capt. Duntz, who wrote a clear official report of the phenomena, says, "On the 26th instant, at 7 45 P.M., the mainmast was struck by lightning; a very vivid flash succeeded by a loud report, as if a broadside had been fired from each side of the ship, was observed by the senior lieutenant then on deck to strike the mainmast." The discharge having passed down the mainmast took the direction of the branches to the bolts through the sides, one leading through the boatswains' cabin, the other through the midshipmen's berth. Captain Duntz states that, on examining the conductor the next morning, the vane spindle was found to have been fused at the point, and blackened one third down. Capt. Duntz describes minutely certain slight disruptive effects on the conductor itself:—"On the conductors of the topgallant mast and topmast there were no marks except at the part covered by the cap, where the heads of the nails appeared to be slightly fused; the plates on the mainmast, low down, were found to have been started from the mast in three places, and two copper bands leading down outside the ship were also started at the ends over the through bolts; and the copper sheathing covering the band, bulged outwards." A boatswain's mate standing abaft the mainmast was, for the moment, blinded by the intense light, and fell on the deck; and a midshipman, near the mast, felt as if he were thrust aside from it, but without falling. The Captain concludes his letter in the following terms: "Mr. Rodd, the senior lieutenant, gives it as his opinion, from the severity of the shock, that had it not been for the efficiency of the conductor, the mainmast must have been totally destroyed, and much serious damage have occurred, in which opinion I fully coincide."

This storm was of no common kind; several pine trees on the near land were struck by the electrical discharge, and set on fire. The people at work on shore state, that the ship appeared as if in a great blaze of electrical light. Lightning struck the ground in several places. The whole atmosphere exhibited terrific lightnings with heavy peals of thunder.

The account given by the First Lieutenant is exceedingly interesting. He says, "As I was speaking to one of the men, relative to the lightning conductor, the electric fluid burst over our heads, striking the mainmast and passing down the conductor within three yards of

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my body. The electric fluid passed off by the conductors on each side of the ship into the water, with an explosion beyond all description; it stunned everybody on board. Thanks to the lightning conductors, with which every mast is fitted, no damage was sustained."

52. One fact connected with this case is extremely worthy of notice. One of the officers in the midshipmen's berth (Mr. Kent) was leaning with his arm upon the casing covering the branch of the conductor leading to the sea, and which, as we have seen, actually conveyed at the time an amount of electricity which started the copper band outside the ship, where it escaped into the water, and bulged out the copper sheathing. But he experienced no ill consequences whatever. What then becomes of Mr. Martin Roberts's prediction, (22,) viz., "If a ship provided with Harris's conductors should unfortunately be struck by lightning, the electric fluid will descend into the hull, there create a *lateral explosion*, and, perhaps in one moment, hurry into eternity every soul on board the ill fated vessel."

53. We have here another most marked practical instance of the truth of the principles we have laid down, (6,) and the perfect competency of a capacious system of metallic conductors, when efficiently applied, to secure ships from the destructive agency of lightning, and, relative to which, there can be no possible mistake. Let us now take a case of one of H.M. frigates, struck by lightning under similar circumstances, and not provided with the same means of defence.

The *Phaeton*, 40 guns, a similar frigate to the *Fisgard*, was struck by lightning, in September, 1824, whilst at anchor in Gibraltar Bay. The following is an extract from the ship's log, of the year, 1824:—"Tuesday, 14th September.—8 P.M.—Ship struck by lightning, which rent the foremast, fore-topmast, top-gallant-mast, and royal mast: set fire to the fore-topmast head, and fore-topgallant and lower studding sails; beat to quarters to extinguish the fire." It appears, further, that the foremast was obliged to be cut off about sixteen feet above the deck, a spare main-topmast was rigged as a jury foremast, and the ship sent to Portsmouth for refit.

This case is the more worthy of remark when relatively associated with the preservation of the *Fisgard*, just detailed, inasmuch as both the ships were of the same magnitude, both struck whilst at anchor near the shore, and otherwise similarly circumstanced in respect of the electrical discharge. The period of the year, and even the hour of the evening, correspond, or very nearly. In each case the thunder-clouds came off the shore, and in each case subsequent reports from the Captains were transmitted through their respective Commanders-in-Chief to the Admiralty.

The following extracts from Captain Sturt's letter, who commanded the *Phaeton* at the time, cannot be read without considerable interest, and, by which, as will be perceived, it is clear that the circumstances under which the ships were placed are very similar.

"From seven to eight, P.M., vivid flashes of lightning seemed to approach the ship; a condensed black cloud, evidently charged with

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electricity, was observed to glide along the side of the rock, and, directing its course towards us, exploded with a tremendous crash, at ten minutes past eight, directly over the *Phaeton;* striking first the foretop-gallantmast it descended down the topmast to the foremast and bitts, all of which were shivered in pieces and set on fire, together with the small sails in the top, and the topmast studding sail in the larboard rigging. The very *hearts of the masts were torn out*, and five of the iron hoops on the foremast partially melted and rent asunder. Several men were struck down, and lay for some time in a state of stupor."

Such then are the comparative results of a discharge of lightning on two frigates similarly circumstanced,—the one furnished with a general system of metallic conductors,—the other not. Can any one, on dispassionately considering these two cases, doubt for one moment the perfect truth of the observation in Captain Duntz's letter, (51,) viz.: "But for the efficiency of the conductors the mainmast of the *Fisgard* must have been totally destroyed, and much other serious damage have occurred."

54. The case of the *Scylla*, 18, already referred to, (42,) is another very striking instance of the perfect competency of the new conductors to grapple with furious strokes of lightning. The full force of a West India thunder-cloud fell on this ship whilst under sail. The whole atmosphere was in a state of fierce electrical excitation; electrical sparks were emitted from the chains and other metallic bodies in the ship. The following is taken from the ship's log, for August, 1843: "Lowered topsails to a squall; A.M. 7h. 50m., struck by lightning, taking its course from maintop-gallantmast-head down the conductor, starting some of the butts and nails where the lightning first struck; it passed by the conductors through the lower deck without doing any damage. 8 30 made sail, &c."

So that it appears within the space of forty minutes, having shortened sail in a thunder storm, the ship, after being struck by lightning, was again under sail as if nothing of the kind had occurred. Captain Sharpe, who commanded this sloop, says in his letter, "There can be no doubt but that our spars were saved by the conductors." What is further remarkable in this case, is, that the gentlemen in the midshipmen's berth, were at breakfast when this fierce discharge of lightning passed along the branch of the conductor immediately over the table at which they were sitting, but, as in the case of the *Fisgard*, without the least ill consequence.

The case of the *Clorinde*, 44, struck by lightning, also at sea, in March, 1813, furnishes another valuable illustration in comparison with this case and those of the *Calliope* and *Dido*, already described. Captain, since Admiral, Sir Thomas Briggs, thus relates the circumstance. The ship being off Friar's Head, east coast of Ceylon,—"About 3 P.M., we observed a dark cloud approaching the ship from to windward, this induced me to clue up the topsails; about an hour after, the frigate was struck by lightning; the cloud we had observed

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was charged with electric matter, and burst on the ship; the mainmast was shivered in pieces, only a wreck remained; three men were killed and many hurt; the concussion was tremendous, Sir Samuel Hood, who was sitting at my table, imagined, for the instant, that the magazine had exploded; the men on deck believed that the maindeck guns had been discharged." The maintopmast was completely shivered, and cut in two pieces, by the discharge. The ship was obliged to go to Trincomalee for refit.

55. We have another and most important notice of the perfect operation of the conductor, in a report from Captain Sir B. Walker, the present Surveyor of the Navy, and who commanded at the time, H.M.S. *Constance*. This ship was, on the night of the 19th July, 1847, struck by lightning, whilst at anchor off Mazatlan, east coast of Mexico, the topgallant masts being at the time partially struck, thus throwing the conductors, as it were, into a new position. In his report to Rear-Admiral Sir George Seymour, the Commander-in-Chief on the station, Sir Baldwin says, "The electric fluid passed down the conductors on the fore and main masts, and passed through the ship without doing any damage, &c." "I cannot," he further observes, "speak too highly in favour of the conductors of this ship, which are fitted on Sir Snow Harris's principle, for the thunderstorm was so violent, that, had it not been for the perfect way in which they are fitted, (our topgallant masts being housed at the time,) the ship would, in all probability, have lost her masts, besides being otherwise disabled, which, on this coast, during the hot season, must have been attended with serious consequences."

56. Any dispassionate person, on a review of these cases and numerous others which might be adduced, must necessarily admit that they are conclusive upon one of the great points, so long at issue, relative to the operation of efficient metallic conductors in ships, beside that they have a most important bearing on the Naval Interests of the country. If such ships as the *Constance*, *Fisgard*, and *Calliope*, had been disabled on a foreign station the inconvenience must have been serious in every way. We have now, however, a full assurance, from the best of all reasons, practical experience, that H.M. ships may, by a systematic arrangement of metallic conductors, be effectually preserved from lightning at all times and under all circumstances; in fact, as already observed, damage to the Royal Navy by lightning has now vanished from the records of H.M. ships.

(To be concluded in our next.)

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Notes on a Voyage to China in Her Majesty's late Screw Steamer Reynard.—*P. Cracroft, Commander.*

(Continued from p. 429.)

On Sunday the 23rd, just after Mr. Stanton had finished the service, a smoke was observed rising over the city, the cause of which there was no mistaking, and I had scarcely given the order to hoist out the boats, when a hurried note was brought from Dr. Winchester, informing me that there was a dreadful fire raging at the back of Captain Milne's Hong. Ashore immediately armed to the teeth, with all hands, fire-engine, grapnels, axes, &c., and commenced clearing away, by pulling down the houses at the back of Captain M's., although there seemed very little prospect of saving it, or, indeed, any of the others. Not a single Chinaman could we get to assist; but our men worked like horses; and, fortunately, it was nearly high water, so the engine was well supplied. We worked hard till nearly 7 P.M., the fire steadily advancing upon us, in spite of every exertion, till the smoke and heat were almost suffocating, and all hope of saving our countrymen's property seemed at an end, without the aid of gunpowder, for which, I sent to the ship. Most fortunately, however, a shift of wind, at 8 o'clock, put the Hongs out of jeopardy; and now my attention was directed to securing the property of the merchants, which was scattered about, attracting crowds of hungry-looking wretches, eager for plunder. My force was accordingly disposed in the best manner to accomplish this object. Bye and bye (the danger being comparatively over) came the mandarins, with bands of followers carrying staves and lanterns, a few had poles with hooks at the end; and Her Britannic Majesty's Consul, with a drawn sword in his hand, and two file of my marines, as a body guard, presented me to their fat excellencies, in their chairs *würdevoll* reposing. It was a rich scene, especially as one of them insisted on shaking hands with one of the sentries I had posted all round the Hongs; which little episode reminded me of the old Turkish Capitan Pascha's remark when he witnessed an inspection of our marines, at Vourlah, in 1839, viz., that they all looked like gentlemen!

By 11 P.M., all danger from fire seemed over, although, ever and anon, a fresh blaze shooting up high into the darkness indicated what was still going on close to us. About this time, I observed, from the top of a house, upon an elevated spot close by, that the city seemed to be on fire in five different places; the crackling and roaring and confused sounds, borne along by the breeze, were sadly audible, but it was quite out of our power to render any assistance to these poor people. Gradually, however, towards morning, the glare waned; and when we returned on board, at 6 A.M., thoroughly exhausted after this most miserable night's work, we devoutly hoped all was over. Rumours, however, of an attack upon the merchants' property, which still remained scattered about, unprotected, brought me off a requisition from H.M. consul to land all my force disposable; and he would not be

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satisfied that the Hongs were secure, until I had paraded my men round them till past midnight on Christmas Eve. On Christmas Day, therefore, thoroughly to restore confidence, I shifted our berth, and moored the ship within 50 yards of, and commanding all the approaches to, the Hongs, and so hoped to put a stop to all fear for present safety on the part of our countrymen.

26th. I landed to day, and strolled through the still smoking ruins; a sad and dismal sight. Upwards of 350 houses have been burnt, including every silk shop; the fire having traversed the quarter of the city inhabited by the silk merchants; the value of the property destroyed by the conflagration, is in consequence enormous; but, I am told, will never be correctly ascertained; and it seems equally impossible to ascertain the number of lives lost!

Our consul and the merchants have sent letters of thanks to us for our exertions; and the mandarins called at the consulate to-day with the same object; all of which is very satisfactory, but does not compensate for clothes destroyed, or poor Fuge's eyes, which have suffered severely; indeed the sight of one seems quite gone. I cannot help thinking, also, that if the mandarins, instead of paying empty compliments, would bestir themselves to get a good fire-engine, (Amoy does not possess such a thing at present,) it would be much more to the purpose.

On the 28th, having hired a covered river junk, drawing very little water, I started, at 4 A.M., on a visit to Chung-chou, a large city, of which Amoy is the sea-port. Besides several of the Reynard's officers, the party included Mr. Stanton, and Messrs. Young and Stronack, missionaries, who are well acquainted with the dialect spoken in these parts, and came well provided with copies of the New Testament, &c., for distribution. A strong flood tide swept us rapidly up the Lung-Kiang, a broad, but evidently a very shallow, river; we passed numerous villages, and several places interesting in Chinese history; as the forts constructed by the pirate-chief Koshinga, who, for so many years, held undisputed sway on the sea-board of this portion of the empire. As we advanced, the country improved in appearance, and seemed to be in a high state of cultivation, plantations of sugar-cane, and groves of orange and pomeloe trees, their fruit just now in perfection, added much to the beauty of a scene which will be for ever vividly impressed upon my recollection. About thirty-two miles up the river, and six below the city, our further progress by water was stopped by the shallows; so, making our junk fast to the bank, we walked the rest of the way.

Chung-chou is a busy place, evidently a commercial emporium for a large district. As Europeans rarely venture within its precincts, our appearance was the signal for a crowd of people to collect, who pressed upon us rather inconveniently. Our friends the missionaries, however, took advantage of this circumstance to get rid of their tracts, &c. After making a few purchases, we proceeded to examine the temples for which the place is celebrated. In one of them is a huge granite idol, which, we were gravely informed, was older than the world itself.

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We next walked round the city wall, which commands a most magnificent prospect, and returned to our junk by water, under an escort with which the mandarins furnished us, to keep off the crowd of busy gazing natives, who had become exceedingly troublesome, although they offered us no actual molestation. Our boatman took advantage of the night tide to drop down the river, and the next morning we were in sight of the Amoy pagoda. Here some of the party landed with their guns in hopes of picking up some game; in which, however, they were disappointed. I was more fortunate in finding some fine specimens of red hematite. This country must be rich in mineral productions; but, as it is the Tartar policy to discourage all labour excepting that employed in manufactures and the cultivation of the soil, there is little chance of its treasures being developed; the geologist would find much to interest him here. We reached the ship at 1 P.M., about nine hours after the time fixed by a port regulation, which absurdly limits the absence of our countrymen from it to twenty-four hours, under the penalty of a fine. This restriction operates as a serious check upon excursions into the interior; and, until Captain Hay, of H.M.B. *Columbine*, proved the practicability of making the trip, that we have just accomplished, within the stipulated time, Chung-chou-foo was under a ban. How long are these foolish regulations, which prohibit our travelling in China as in other countries to be permitted to exist?

On the 31st, I took the ship to the Six Islands at the entrance of the harbour, to exercise the guns; anchored off Taetan, (the opium station,) and made some excellent practice at the targets, which were whitewashed on the rocks; returned into the harbour in the evening, and moored off the Hongs again. I took this opportunity to test some coal, the only kind that was to be procured here; it came from Chung-chou-foo, but was found not at all adapted for the generation of steam; in fact it almost put the fires out, and the ship was very nearly ashore in consequence; its formation consisted apparently of layers of iron and sandstone intermingled with coal and slate; and, on raking out the ashes, portions were found upon which the fire seemed to have had no effect, while others were found fused like glass.

January, 1st, 1850.—The mail from England arrived to-day, in the *Zephyr*, one of Messrs. Dent and Co's opium clippers: London dates to October, 24th.

The Chung-chou coal having failed, and no other kind being forthcoming, except, by the way, a small quantity from Formosa, (about 60 lbs.,) which seemed admirably suited for steaming purposes, although only tested in the galley, I determined to fill up with wood, in case of being obliged to steam on my passage to the Min. Accordingly, having completed this, and the excitement consequent on the fire having subsided, on the 15th, I unmoored and weighed at 1 P.M.; anchored for the night, at Taetan, but could not lift the propeller, owing, as we found out afterwards, to the lead line of the lee chains, which was lost in coming out, having wound round the shaft, and jammed it against the stern-post. We carried away all our purchases in trying to lift it,

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without effect. The next morning, as a *dernier resort*, got the steam up again, and, after a couple of hours run, the line was bruised and cut sufficiently, and the propeller came up without further hindrance. On examination into the cause of this trouble, the metal washer that fills up the space between the boss and the framing of the stern-post was found much worn: it must be lined up afresh the first opportunity. Put the fires out and made sail. The wind fell light in the afternoon, and we anchored for the night in Lee-loo Bay, which affords excellent shelter in this monsoon. Started at daylight, and worked up past How-e-tou Bay in good style, and had hopes of getting up to Chemo before dark, but the ebb-tide was too strong for us; so seeing a junk run in for shelter under a little projection, called Scrag Point in Collinson's chart, (and a scraggy looking place it is,) I made bold to follow her; anchored in 9 fathoms; and a more miserable night I never spent on board the *Reynard*. There was a heavy ground swell, which increased with the wind; and, when the weather tide made, nearly every sea broke over the gunwale, flooding the decks fore and aft. At daylight the aspect of things was worse; a gale of wind was evidently brewing up, so I decided upon getting away from here at once. Attempted to make sail; but the anchor, with 40 fathoms of chain out, began to come home, and an ugly looking reef only half a mile to leeward grinned destruction at us. Our situation, no doubt, appeared critical from the shore, for the Chinese began to congregate in numbers upon the beach, evidently in anticipation of spoil. Under these circumstances, there was nothing for it but to get the steam up as soon as possible; and before 8 A.M., I had the satisfaction to see the ship's head brought round most beautifully, against both wind and sea, and in a couple of hours she was in a snug anchorage in How-e-tau Bay, off Oyster Island; thankful indeed am I to have got clear of this Scrag Point, although a few miles are sacrificed in consequence.

We remained here until Monday the 21st, when, the weather having moderated, a change accompanied by a corresponding fall in the barometer, we made sail and worked up to Chemo Bay, and anchored for the night, although it was yet early. The outline of this coast is very remarkable; and Kusan pagoda, standing prominently on the summit of a lofty hill in the rear of the town, is a splendid landmark, which can scarcely be mistaken by the mariner; but between How-e-tou and this place, there are more fishing stakes (bamboo buoys belonging to the sunken nets) than I have yet noticed on this coast. They would help, not a little, to indicate a vessel's position, in thick weather.

Chemo bay is anything but a pleasant anchorage; although I went very close in, and inside many of the junks, I could not avoid the heavy swell which set into the bay; the holding ground is, however, good. I did not attempt to land as the inhabitants bear the character of being the greatest thieves and pirates of any place between Canton and Foo-chou. Here, in 1847, the opium depôt ships were surprised, and the crews brutally massacred; the station was in consequence shifted to Chincheu, a harbour a few miles further to windward. At daylight on the 22nd, we were underway, working up to the anchorage under

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Pyramid Point, which we intended to gain before dark. There is a walled town (Tong-boo) in this bay, off which several junks lay at anchor.

This being the commencement of the worst part of the Formosa Channel, I had made up my mind not to tear the ship to pieces in attempting to work to windward against a current that sonmetimes sets through these narrows like a race, but to steam round Pyramid Point; so we got the funnel up, screw shipped, and everything ready for a start, at daylight, Fortunately the morning turned out all that could have been desired: the monsoon had died away to a light breeze, the water was smooth as glass, and everything seemed to prosper us; under such favourable circumstancees Pyramid Point was soon under our lee.

A little before eight o'clock, as I was walking the deck, meditating on the events that have so lately befallen us, and on the two or three narrow escapes the ship has had, and withal rejoicing in my good fortune, an alarm of "Fire," was given by the quarter-master, and in an instant the gaff mainsail was in a blaze. The engines were immediately reversed, thanks to the double eccentrics with which they are fitted, and all hands at their stations; but before a bucket of water could be drawn, or the fire-engine, which was ready with hose stretched along, brought into play, many of the ropes round the mainmast had caught, and for two or three minutes the mast itself appeared in jeopardy. By dint of great exertion, however, cutting the peak and throat haulyards, outhauler, &c., the sail was got down, and the fire extinguished; not, however, until much damage had been done, and our old sail, that has had many a blow with us, rendered perfectly useless. This is our first experience of burning wood, and the warning will not be thrown away. The danger attending its use is owing to the *bark* coming up the funnel in an ignited state; and it will be necessary in future to keep all the sails, boats' covers, mats on the yards, &c., well wetted when using this fuel: our clothes did not escape, as we soon found to our cost. We passed close to the islands at the entrance of Haetan Straits, (the cones on the Lamyetts are very remarkable,) gave Turnabout a close shave at 6 P.M., and a little before midnight anchored under the White Dog Islands, ready for entering the dreaded Min early in the morning.

Thursday, January 24th,—Got away at seven o'clock under steam, and steered for the knoll at the entrance of the river. There was a thick mist hanging over the land, which gradually extended, so that, in half an hour, we lost sight of the White Dogs, by which the course ought to be directed, and I hesitated about proceeding. To return now was, however, almost as bad as the attempt to go on, so I made a virtue of necessity. But it was nervous work, the shoals extending full seven miles on either hand, and the soundings in the channel having altered considerably since the survey was made. As we drew in, the fog lifted a little, and we made out the Sharp Peak, which it is quite impossible to mistake; and shortly after caught sight of Rees's Rock, on which the swell was breaking heavily, it was nearly awash.

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Before eleven o'clock we had cleared the bar; and in noting my satisfaction, I do not wish to magnify the difficulties and dangers surmounted, though they are enough in all conscience; but because so many mishaps have attended H.M. ships on this part of the station. Here the *Scout*, commanded by an old friend and messmate of mine, was all but lost. On one occasion she was submerged, for six weeks, and was only raised by the great skill and experience of the Chinese divers employed. At length the Commander-in-Chief issued an order forbidding men-of-war from entering the river at all, and directing the necessary communications with the consulate at Foo-chou-foo to be made with the boats from the White Dogs, a distance of full forty miles. This could not be accomplished without great risk, and on one occasion a pinnace belonging to H.M. brig *Pilot*, going up with treasure, was all but lost, after having been two days trying to find the entrance of the river. This order I am under the necessity of disobeying, not having a boat fit to be trusted in a sea-way out of sight of the ship.

Dropped the kedge off the entrance of the Woga Creek, where the two opium depôts, the Anita brig, *Heley*, and Mahmoudie barque, *Crauford*, are anchored, and received a visit from the masters of them. A little before noon, although the ebb was not half done, the anchor was up, and we stood up the river. The springs are coming on, the moon being twelve days old, and we found the tide running a perfect sluice in the Kingpai Pass, which the ship went very slowly over, although her speed was full seven knots. Indeed for a moment she appeared in a scrape, as the tide took the port bow, and swung her head almost across the river, when nothing but letting go both anchors could have saved her; fortunately the head sails, which were very quickly set, helped the helm, and she recovered herself. It is evident this passage ought only to be attempted at slack water; the channel cannot be more than two cables' length wide, and a longer vessel than the *Reynard* would certainly have been unmanageable in the *chow-chow* water.

And now the magnificent scenery of the Min opened to our view. Hill piled above hill, while the lofty peak of Koo-shan towered over all in the distance. On most of these acclivities cultivation is carried to the very summit by terraces; and where the steepness renders this impracticable, patches of stunted fir-trees *(pinus Sinensis)* clothe the nakedness, and give a finish to the landscape. Lower down the hill sides, and on the left bank of the river, are scattered towns and villages, with a sprinkling of forts and joss-houses; the former apparently of very recent construction. The Min here was alive with junks, laden with wood, and river craft of all descriptions. It was a brilliant day; and as the ship glided through the water, eliciting exclammations of surprise and approbation,—"*Oha! oha!* good, good," from the swarthy junkmen as she passed them, to whom the screw is indeed a novelty, my happiness was at its zenith,—"*So ging es fort*," how soon, alas! to be changed. We had passed the town of Mingan, and the fort, (the scene of the *Scout's* mishap,) and had almost cleared the

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pass of the same name, indeed I was congratulating myself on all dangers being now over, when, close to the small island, and in a part of the river where Collinson's chart gave not less than 2½ fathoms, the ship suddenly grounded; and, after a couple of ineffectual starts, remained immoveably fixed on a ledge, having only eight feet under her forefoot, and three and a half abreast the main chains! As soon as my astonishment at this unlooked for *contre-temps* had subsided, the carpenters were instantly set to work to batten down every hatch, and close every aperture, being apprehensive that if the tide ebbed much more, the ship might fall over before we had time to get shores placed; shifted the guns over to the port side, as there seemed a disposition to heel over on the other; hoisted the boats out and dropped the stream anchor about a cable's length astern, ready to haul off as soon as the flood made. We were hard at work getting shores ready, when the quarter-master, stationed to watch the tide, reported it had ceased falling. I immediately went with the master and examined the ledge, which, to my surprise, we found extended nearly across the river; the depth on it varying from seven feet to two fathoms. It was now dead low water, so we were enabled to form a pretty correct estimate of its position and extent: and how such an impediment to the navigation of the river could have escaped notice before this, is past my comprehension.

During our absence from the ship, the water had begun to rise, although the ebb was still running down on the surface; and in about two hours from the time she struck, I had the satisfaction of seeing her afloat again, I trust not much the worse for the mishap, which has, however, effectually prevented my reaching the city to night as I had intended. Moored in the broad reach off Pagoda Island; got the boats in and made all snug before dark, for this is a wild looking place, and in bad weather, which is now threatening, must be any thing but a pleasant anchorage.

January 25th, at 7 A.M., started in my galley for the city of Foo-chou-foo, distant from this anchorage about nine miles. The scenery for the first four or five miles is very beautiful, and brought to my recollection that of the Rhine between Stolzenfels and Goarhausen; to the right towered the magnificent peak of Koo-shan, more than 3,000 feet above the level of the sea,—the finest sight I have yet seen in China.

About four miles below the city we passed the stakes, which are driven in half way across the river, to prevent the approach of our men-of-war; junks laden with stones being sunk also. This was one of the fruits of Sir John Davis's advance upon Canton in 1847, and the navigation is effectually ruined by it; even their own junks (of any tonnage) have great difficulty in getting through. At the bend above this barrier, we caught sight of a forest of masts, and the Pagodas of the city appeared in view.

Foo-chou-foo stands in an extensive plain, which is bounded on three sides by ranges of lofty hills; its population is stated to number within the walls 600,000, while that of Nantai, and its other suburbs,

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may swell the total to a million. The river, on the banks of which it is situated, is spanned by a bridge, of more than forty arches, which I had heard described as a wonderful work of art, but with which I was much disappointed. In truth it is of the most primitive construction: rude piers of masonry are connected by great slabs of granite, exhibiting a total want of engineering skill. Great credit must be, however, given, for the patience and perseverance required to sink piers in a river running with such rapidity as the Min. Crowds of junks, principally spar laden, were moored in tiers below the bridge, like colliers in the Pool, while the broad expanse of the noble stream, more than half a mile wide at high water, was studded with boats, and presented on all sides a scene of the greatest bustle and animation. I landed on the south side at Captain Heley's house, and, having engaged chairs, as no one walks in China who can afford to be carried, proceeded across the bridge towards the consulate. An hour's sharp walking (the distance must be over three miles) through a suburb lined with shops on either hand the whole way, and a very crowded thoroughfare, brought us to the city gates. Here a guard is stationed together with a couple of quaint looking old iron guns, mounted upon wheel carriages, looking equally superannuated. The first turning to the left after passing through these gates, took us straight to the consulate, which is charmingly situated on a hill, overlooking the city, and commanding a most extensive prospect.

Belgrave Jackson, Esq., H.M. Consul in this outlandish provincial capital, received me most cordially, as well he might, when a European face here, is as great a curiosity as a China man's would be in Regent street. Besides his family, the only residents here are the Interpreter, Wm. Gingell, Esq., an officer in the E. I. Company's Service, and Mr. Compton, a merchant, who has only lately arrived from Canton, and has not succeeded in establishing his residence inside the city walls yet. All the missionaries reside at Nantai, on the other side of the river, full four miles off, and the communication with them, from various causes, is not very frequent.

Foo-chou-foo is the residence of a Viceroy, and has a strong Tartar garrison, commanded by a Lieut-General. Martial law prevails, and the gates are strictly closed at sunset until daylight. For a few copper cash, however, any one adventurous enough, may be lowered over the wall, in a basket, *by the guard*. Many of the streets are well paved and spacious, and the shops gay. Those of the military clothiers and accoutrement makers, porcelain, lamps, and furniture, are the most attractive. The dealers in curiosities are a numerous class, and it is difficult to resist making an investment. Among the manufactures a species of japan ware, which is not to be met with, I am told, elsewhere in the flowery land, and a method of weaving strips of paper into pictures, may be mentioned as being worthy of notice. I met with no molestation nor incivility during my rambles, which extended almost all over the city; and the only inconvenience, hardly worth mentioning, was a slight thronging whenever I stopped to make a purchase. The only buildings worth inspection, besides some solid

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substantial built guard-houses, one of which has a handsome clock attached to it, are two ruined pagodas, named, from their colours, the black and white pagodas.

The walls of the city are in perfect repair, and afford a pleasant promenade, the only one, indeed, within some miles, for the bunds or paths which divide the fields are not broad enough for two people to walk abreast, and are, withal, so slippery, being paved with granite, that I found it almost a difficult matter to keep my footing at times, and a false step would send me inevitably floundering almost knee deep in the odoriferous compo indispensible in Chinese husbandry. But, as I said before, no one walks who can afford to be carried, in China, and the chair coolies' bare feet (sometimes they wear broad grass sandals) rarely slip.

THE LADY MONTAGUE: *How a British Merchant Ship can be Sailed!*

On the 22nd of April, 1848, the ship, *Lady Montague*, Captain Wells, left Southampton Water, bound for Aden, with coals for the Peninsular and Oriental Steam Packet Company. The chief mate was named Smith, and amongst the crew were five apprentices of the ship's owner, lads who had been recently bound, and most of them going on their first voyage. Their names were Mansbridge, Millard, Lee, Paul, and Oscroft. Mansbridge was the youngest apprentice; his parents keep a small shop at Northam, just outside Southampton, and are very industrious and worthy people. Millard and Paul are related to some of the first tradesmen in Southampton. Lee's father kept the Temperance hotel in that town. Oscroft came from Brighton. The parents and friends of these boys were given distinctly to understand that the *Lady Montague* was to be away from England eighteen months only. The crew of the ship were thirty-six in number. It was considered that she went out shorthanded. There was no doctor on board. Captain Wells when he left Southampton was afflicted with some complaint, of which he died in six weeks after he was on his voyage, while the ship was off Trinidad, on the Spanish Main. The chief mate, Smith, then took charge of the vessel. The *Lady Montague* touched at Mauritius. After discharging cargo at Aden, the ship went to Bombay, and took in cotton, and proceeded to Whampoa, on the coast of China, and then traded with rice and sugar between Whampoa, Amoy, Shanghae, and Hong Kong, and continued trading thus long after the period had elapsed for her to return home. The parents of the apprentices received letters from the latter, but never could reply to them, because the captain always refused to tell the boys to what port he was next bound. The owners declared that Captain Smith was keeping the ship out without their permission, and they knew nothing of his whereabouts.

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While trading on the coast of China, the *Lady Montague* touched at Cumsingmoon, a small Chinese village between Hong Kong and Whampoa, where opium is stored, and landed. Here Captain Smith engaged with a Spaniard named Mur, to take on board 450 Chinese emigrants. These emigrants believed they were going to the gold diggings at California, but they were secretly destined by the supercargo for Callao; to be employed in loading guano ships at the Peruvian islands. All these poor Chinese signed indentures by which their labour was secured for four years, by some party or other, for four dollars a month per man, and three months' pay in advance. That they had engaged to go to California was evident, because those who spoke English distinctly stated so on the voyage; and it was proved also from the horror and affright they manifested when they learned at Callao for what they were destined. The crew of the *Lady Montague*, when she left Cumsingmoon, consisted of the five apprentice boys from Southampton, and others chiefly Lascars and Manila men. Four of the Lascars had their wives on board. The mates were English, and there was a midshipman on board, a Mr. Brazier, who had belonged to the ship ever since she had been out. The vessel had been terribly infested with rats since she touched at Aden; and no trouble appears to have been taken to get rid of them. The crew and Chinese emigrants amounted to nearly 500 persons. The emigrants were thickly stowed away. There was no cargo carried between decks. As the captain of the *Lady Montague* received 60 dollars, or £12 a day, for the conveyance of the emigrants to Callao, and was to receive that sum from the day the emigrants came on board until the vessel returned to Hong Kong, it was his interest to make the voyage as long as possible. He accordingly took a southerly course on leaving China, and proceeded round Southern Australia. Three days after leaving Cumsingmoon, sea-sickness broke out amongst the emigrants, and soon afterwards some fatal malady, by which, before the ship reached the Peruvian coast, nearly 300 of the emigrants and crew perished. The voyage to Callao occupied four months; and before the *Lady Montague* returned to Hong Kong twelve months had elapsed. During the voyage from China to Peru the *Lady Montague* touched at Hobart Town, and sighted New Zealand. Among the 275 who died during that voyage, were the doctor, (who was shipped at China,) the second mate, Mr. Brazier, (the midshipman,) and John Paul, an apprentice. The captain, it is stated, has been seen running about the deck with a drawn sword. He flogged two of the Lascar women for some trifling offence with the utmost severity, and made one of the apprentices hold a candle to him while he did it; the women only had a cotton covering on them when they were flogged. The Lascars looked on crouchingly. The second mate having died, and the chief mate being at one time delirious, the apprentices had to do the work of the men; and the captain, in fits of wanton brutality, used occasionally to kick the boys away from the wheel when it was their turn to be relieved. Several of the apprentices were taken ill during the voyage, and at such times they attended upon each other as well as

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they could. The apprentice Lee was invalided, and left at Hobart Town. Millard had the fever several times. Mansbridge also caught the fever, and was ill for a fortnight. He had medicine only twice during his illness, for the doctor was laid up. Once the captain came to Mansbridge and brought him some medicine, and the boy once afterwards waded up to his knees in water (for it was during a heavy gale) to the doctor's room to get more. While he was ill fierce and ugly-looking rats came and bit his toes, but he shook them off. John Paul, another apprentice, died miserably, three days after leaving Hobart Town. Three days before he died he was insensible; he scarcely ever spoke during his illness, but moaned in agony. Two of his fellow apprentices attended on him. The captain afterwards sold the poor fellow's clothes, and raffled away his watch. His mother, the wife of a highly respectable yeoman in the New Forest, visited the *Lady Montague* as soon as she arrived home, to hear what tidings she could of her son. Oscroft, the Brighton youth, deserted at Callao, and it is not known in Southampton what became of him.

It has been already said that sickness overtook the Chinese emigrants soon after they left Cumsingmoon; and which sickness extended to the crew, both Lascar and English. The sickness amongst the Chinese was increased by the supercargo refusing them opium, to which they had been accustomed. It was thought that he refused the drug because he could make a high price of it amongst the Chinese who work on the Peruvian guano islands. But the sickness amongst the Chinese and Lascars was aggravated by the death of the doctor, and, more than all, by the bad quality of the provisions. The fish and water on board became putrid. Better fish and water were taken on board at Hobart Town, but in insufficient quantities. The Chinese would not touch their dead fellow-countrymen, whose faces were horribly mutilated by rats; and the task of throwing the dead bodies overboard devolved on the apprentices. Five of the Chinamen, in fits of madness and despair, jumped overboard. They appeared to be expert swimmers and divers. One of them slid into the water by a rope's end, and was seen slily concealing his head under water to prevent being seen and taken on board again. When nearly drowned he was secured, and he recovered after some difficulty.

One was swimming near the ship, and a boat was sent after him, but he kept diving, to prevent being saved, and at last reappeared no more. The last they saw of another was as he was swimming away from the ship, about two miles astern, apparently making for land, which loomed a long way in the distance. This was in the Pacific Ocean. Twice the Chinese showed a spirit of insubordination. The Indian Seraing flogged a Lascar during the voyage, who implored, in the Chinese language, the interference of the emigrants; and the latter were about to interfere, but they desisted, at the request of the supercargo, who went and spoke to them. When the ship arrived off Callao, she was put in quarantine. Some Chinese, who appeared to have been trepanned to Peru, got into communication with their countrymen of the *Lady Montague*; and, as it appears, informed them of the deception

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that had been practised on them. While in quarantine, also, the emigrants were put ashore on the island of St. Lorenzo, for the benefit of their health, and some English man-of-wars-men cut off their tails in a frolic. All this raised a spirit of frenzy and mutiny amongst them; but they were soon pacified. They seemed to be reconciled to anything in order to leave the detested ship.

When the *Lady Montague* returned to Hong Kong, which was twelve months after she left Cumsingmoon, Captain Smith was superseded by a Captain Le Shaw, sent from England by the owners. After Smith was superseded, he attempted to bring ashore a large box of money, but was prevented by the new captain. The *Lady Montague*, after calling at Singapore and Madras to take in sugar and buffalo horns, proceeded to the Cape of Good Hope on her way to England. The new captain did not replenish his ship at the Cape and at St. Helena with sufficient stores, so that the crew were placed on short allowance. After leaving the latter place they obtained some provisions from a passing ship, but it was not enough; and the crew, including Mansbridge and Millard, suffered great privations. At length the *Lady Montague* reached the Cove of Cork, after an absence of more than four years, and the new captain afterwards was dismissed for his misconduct.

The above account is an unexaggerated statement, taken from the lips of William Charles Mansbridge, one of the unfortunate apprentice boys, whose father declares that it corresponds with what the boy confessed to him, in all truth and sincerity, when he first arrived in this country, and also with what he stated to the official who came from London to Southampton to take his deposition; and it is borne out by what young Millard told his uncle, a retired Southampton tradesman, who took great interest in his nephew, and even accompanied him some distance in the *Lady Montague* when she first left Southampton Water. Mansbridge never talks about his sufferings except when questioned. He appears uncontaminated by any vice, is short of stature, but looks every inch a sailor, and retains his unconquerable love of the sea. The agony the parents of the apprentice boys suffered during four years no pen can describe. They used to meet to condole with each other. All they knew was that their children were thousands of miles away, suffering privations and cruelties from a man whom the owners of the *Lady Montague* declared had committed an act of piracy, and of whose movements and whereabouts they knew no more than the parents themselves. A few weeks ago Mrs. Mansbridge heard a knock at her shop door, and, looking through a small window from an inner room, saw a miserable-looking youth standing outside. "Ah, dear me!" she sighed; and, moving slowly into the shop, said to herself, "I must give him something, I suppose, for one don't know what one's own may want." In a minute afterwards she embraced her long absent son.

The sad story of the *Lady Montague* is pregnant with reflection. Here are five youths, fired with the noble passion for the sea, taken from happy homes and exposed for years to intolerable hardships and

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galling tyranny. Two sink under it, another flings himself on an inhospitable coast rather than endure it, and the other two would have deserted to the same shore if it had been possible. But there are reflections more painful than this, for they more deeply affect the national character. Every now and then we hear of some frightful tragedy in the Chinese seas. Chinese passengers barbarously murdering the English crews of ships which are conveying them. Perhaps the tale of the *Lady Montague* reveals the secret of some of these atrocities. At Cumsingmoon there may be schemes concocted, not inferior in atrocity to those contrived on the coast of Africa. Poor ignorant Chinese have been evidently decoyed on board a British ship there, under the belief that they were going to California for gold; and have been then doomed to virtual slavery for years amidst the poisonous and eternal stench of the Peruvian guano beds.

Out of a crew of thirty-six persons which went out in the *Lady Montague* from Southampton to the eastern seas a few years ago, not half a dozen have returned to England! all the rest either perished in the ship or deserted from her. Three of those who did return are natives of Southampton, and are mere youths, named Mansbridge, Millard, and Lee. Government officials have visited Southampton, and have taken the evidence of these boys, which evidence is of a most important nature, testifying, as it does, to life and scenes on shipboard of appalling depravity and misery. Three times Millard had the fever, was delirious, and recovered without medical assistance. It was his province to throw overboard the dead Chinese emigrants in the Pacific, a dozen of whom would die in the night, and be partly eaten by rats before the morning. The water and food the crew and passengers had to live on stunk so that they could not approach them until they were nearly starved. Mansbridge is the son of poor parents. He was an apprentice on board. His friends, of course, were anxious that the indentures should be cancelled, after the terrible sufferings he had undergone, but the owners refused. The boy, however, expressed neither inclination nor objection to rejoin. At length his leave of absence expired, and he was to rejoin, or his father was to forfeit £20. As the payment of the penalty was impossible, the father said to his family, as they were at dinner, "Either the boy must join the ship, or you, mother (speaking to his wife, a spirited little woman), must go to London and see the owner." After a slight pause, "Father," said the boy, with a slight trembling of the lip, "mother had better go to London." And to London she went, and made such good use of her tongue that the owner pretty soon agreed to cancel the indentures. It was through the journey to London of this poor woman that the government partly became acquainted with the terrible recital of what had happened on board the *Lady Montague*. Mansbridge has now a comfortable situation in the service of the Peninsular and Oriental Company.

Daily News, 28th July.

The *Lady Montague* has been chartered by the government to take out convicts.

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VOYAGE OF H.M.S. "CALYPSO," CAPTAIN WORTH, TO THE PACIFIC.

Continued from p. 412.

Between Acajutla and Istapa the land is very high, with a thickly wooded beach, and soundings along it. We started in the evening with the land wind, and next day stood in with the sea breeze; by sunset we made the land about the anchorage, but not distinctly; with the sea breeze we anchored in 22 fathoms, about four miles from the beach, the surf making a great noise.

It is better to anchor on this coast, as the currents are so very doubtful, and the breezes so uncertain. At daylight we saw the mountains and houses at the landing place quite clear; weighed and stood into the anchorage, and came to in 14 fathoms sand and mud. We were considered rather close in, being not above one mile from the beach. The best distance from the shore is in 17 fathoms, about one and a quarter miles off, an open beach affording no shelter. Ships' boats cannot land, and should never attempt it.

The return passages are rendered easy, the sea breeze blowing from S.W. being a fair wind.

The foregoing is a statement of the *Calypso's* cruize on this coast, and will be found to be the general passages and weather at this season of the year, viz., the fine weather season.

Puntas Arenas is an excellent harbour of very great extent.

Acajutla, or Sonsonate, Roads, although not much known, is safe, the oldest inhabitants remembering only one wreck; the reef off Remedios breaks the sea as it sets directly into the anchorage. Here the salt water is very injurious to cables and copper. Although at anchor not more than a fortnight, the cable and anchor were completely covered with small shell-fish, as also the boom boats, a remark that is applicable to all the harbours that we visited on this coast, though not so much so as at this place.

The passages to the westward are uncertain as to time, the land and sea breezes being so very uncertain.

The land breeze always blows, if even only for a short period, at all the places we visited, except Conchagua, and is nearly always sufficient to take a ship to sea; as a rule I should recommend on leaving any port that you stand off shore, always bearing in mind that the sea breeze is from S. to S.W., that you may make a long leg in shore: there is a current always setting to the S.E.

At Conchagua the land wind is extremely strong, at times nearly half a gale, and must be guarded against as before-mentioned. The tides in all the harbours are very strong.

The Papagayan breezes are very fiery, and dangerous to some of the small coasters, which are not very well found. They are, however always leading breezes along the coast.

The trade on the coast of Central America, which is almost exclu-

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sive British, is rapidly increasing. At Puntas Arenas excellent coffee is exported, giving occupation to between fourteen and twenty vessels, and is the best coffee in the Pacific.

At Realejo, dye-wood; at La Union, indigo, &c.; Sonsonate, indigo; Istapa, cochineal. Provisions of every description very cheap, and the inhabitants obliging, the European residents excessively so.

Leaving the coast for Valparaiso we steered to pass midway between the Islands of Cocos and Malpelo, and thence to make the land near and to the southward of the line, taking advantage of the winds to work as far south as possible before stretching across the trade. We reached within forty miles of Cape Blanco, and made the land, Port St. Eleua, to the northward of the Guayaquil.

We left Realejo with the strongest land breeze I ever saw. After passing Cape Velas, we had two days calm; and thence to the line variable and light winds, with some rain, which took us to the south and eastward.

After passing the line, which we did on the tenth day from Realejo, we found south and south-westerly winds; observing great ripplings on the water, found the current to the northward of Cocos setting to the northward and eastward. After passing Cocos, the current generally set to the southward, sometimes as much as thirty miles a day, but very uncertain both in force and direction. To the southward of the line, the current set to the northward and westward, also very uncertain, as one day we found it twenty-five miles, and the next no current at all.

These ripplings are very remarkable; we lost them when we got the trade in 4° S., on the 21st.

The route taken by H.M.S. *Calypso*, is the same as that taken by H.M.S. *Champion*, in 1842; on both occasions good passages were made to and from the line on the north side, which is the only difficult part of the passage. The *Champion* experienced very heavy rain, accompanied with thunder and lightning, after passing Cocos; whereas in the *Calypso* we had very heavy rain and no lightning. Both passages were in the same season, and nearly in the same time.

On the coast of Central America the currents are variable, but almost always setting to the S.E., sometimes rather strong. The land wind never blows far off shore, and except in the harbour is not certain; the sea breeze is seldom strong; but there are of course exceptions, as when we left Realejo and Puntas Arenas at both places we experienced, on one occasion, a remarkably strong land breeze.

Previous to the dry season having fairly set in, you will find the land wind blow off very strongly for many days together; we were waiting to enter Realejo Harbour six days in this manner in January; but this can hardly be called the land wind.

The coast has soundings with the hand lead from Cape Blanco to Istapa; and from the information I could gain from trading vessels and from our own experience, it appears to be perfectly clear, affording anchorage nearly every where.

Standing across the S.E. trade, it drew gradually to the eastward;

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and on the 4th April, in 24° 31′ S., to N.E., going round by north to west and S.S.W.; and on the 7th to S.E. and E.b.S., increasing to a gale, with a heavy swell from S.W., lasting until the 10th, when the weather moderated; and we had variable winds principally from the eastward, which on the 13th took us into 35° 11′ S. The wind now drew round to N.E. by N., N.W. and W., blowing a strong breeze, taking the ship to the eastward. After passing Juan Fernandez the wind drew round to the southward, and took us into Valparaiso on the 17th April, 1846, having been forty days from Realejo.

Sailed from Valparaiso on the 25th April, had the usual passage and weather, arriving at Callao on the eighth day.

On the 25th May left Callao for Tahiti, with fine weather and moderate breezes. On the 17th June, in the forenoon, made the Islands of Disappointment; made the centre of the west island 14° 7′ S., 141° 21′ W.; and the centre of the eastern island, 14° 10′ S., 141° 8′ W. They are low and thickly wooded; and, as far as we could judge, lay east and west of each other: the surf appearing to beat on the reef, but not heavily. The natives came off in canoes, but would not venture on board.

The longitude given by the chronometers places these islands to the eastward of the position shown on the charts. We passed about three miles to the north of the eastern Disappointment Island, and then passed the chain of Low Islands forming the northern range of the Low Group, and arrived off Kruzentern Island, which appeared to form a large circular lagoon, of about eight or ten miles in diameter, and is very low. We made the west point to be in lat. 15° 00′ S., and long. 148° 14′ W. This island is also to the east of the position on the chart.

The whole range of these small islands are coral, and are generally well wooded.

At daylight on the 22nd, made the high land of Tahiti, at sixty miles distance.

The entrance to the harbour of Papeite is narrow; but, with the exception of a small pinnacle rock, lying just inside the reef, on the port side of the entrance, and having nine feet water on it, the reefs distinctly show themselves; but, as a pilot can be obtained, it is advisable that strangers should avail themselves of his services. The same remark holds good with all the anchorages at the other islands; at Morea and Raiatea more particularly; for, with a large vessel, it becomes very awkward, and at times dangerous, without an intimate knowledge of the entrance; it frequently falling calm for hours, when the swell sets directly upon them.

The best anchorage amongst the islands, is Raiatea; as there is a good entrance, and equally as good an exit, and which are always capable of being taken, the wind always blowing directly through: the only disadvantage is the depth of water, about 18 to 24 fathoms; the holding ground is, however, very good: and abundance of fresh meat, vegetables, &c., and fish, to be obtained. Fresh water can also be procured, but not so readily as at Tahiti.

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The anchorage of Boro-Boro is difficult, as you are obliged to shorten sail between the points forming the entrance, and shoot up as far as the ship's way will allow, and then anchor, the wind always blowing directly out; it is then necessary to kedge up to the head of the harbour, when you may generally be able to make sail to the anchorage off the settlement.

Here, as in all the harbours of the Society Islands, it is advisable to enter before noon, as the water appears to be still, and at times setting in, until noon, when it recedes; the strength of the current being determined by the body of water thrown inside the reef, and which depends upon the strength of the wind and the break over the reefs caused by it.

The reefs that surround these islands are all steep, and do not extend further than one mile and a half off, except at Boro-Boro, where the reef stretches out to the S.E. nearly three and a half miles, making a very dangerous spit, particularly coming from Raiatea, as it is in the route to the harbour of Boro-Boro.

We found the harbour of Huahine difficult to enter; taking the south passage, shortening sail, shooting in, and anchoring, as at Boro-Boro, and then kedging sufficiently far to make sail for the anchorage off the settlement, which is very confined, and the water deep, and the passages very narrow; too much so, I conceive, for a large frigate to attempt with safety, unless towed in by a steamer, as was the case some time since when a French 50-gun frigate visited it.

We sounded, and made the shape of the passages through the reefs and the soundings to agree very well with those pointed out by the plan of the harbour on the Admiralty charts.

Here, as in the other harbours, the reefs distinctly show themselves.

Sailed from Morea, on our return to Valparaiso, on the 7th November, passing to the westward, and were favoured with the S.E. trade, which allowed us to lay well to the southward, and to anticipate a quick passage. For the first days had a westerly set of about fourteen miles, but which left us on the 14th November, when we reached 25° S.; the wind at this time drew round by east to the N.E., and on the 15th a fresh breeze sprung up, which lasted until the 19th, when it changed to calms and variable weather, from S.S.E. to east.

On the 20th the wind set in steadily from the eastward, and gradually rose to a gale, with a considerable sea, which lasted until the 26th, having ranged between E.S.E. and E.N.E.; it then moderated, and drew round to the southward, as we made easting.

On the morning of the 14th December, made the Island of Masafuera, the wind having changed to south. In the morning of the 15th made Juan Fernandez, the wind being still south, and which took us into Valparaiso on the 17th.

This is the second time of crossing the S.E. trades, in H.M.S. *Calypso*, that we have experienced a fine sea breeze from north to N.E., when leaving the tropic, and shaped a course for Mas-Afuera; and on both occasions we have met strong easterly gales; and which,

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I think, proves that above the parallel of 33° you are not free from easterly gales.

We found the weather extremely warm at the islands. At Morea the thermometer stood at 88°; at Tahiti, 79°; and at Raiatea a little less, as there is always a breeze.

The farthest south latitude we were driven to by the easterly gales was 43°, being then in long. 140° W.

Provisions of all sorts are dear and scarce, in consequence of the protectorate wars, more particularly at Tahiti, Morea, and Huahine; at Boro-Boro they are cheaper.

The principle articles of stock are pigs, poultry, and bread-fruit; yams are obtained from the other groups; and there is but a small quantity of taro.

All the islands are high; there are one or two small coral islands, covered with cocoa-nuts, close to Tahiti and Boro-Boro; namely, Tethuroa, about twenty-five miles to the north of Tahiti, and Tubai, twelve miles N.b.W. from Boro-Boro.

From Valparaiso to Callao, thence to Pitcairn and the Society, Feejee, and Friendly Islands, returning to Valparaiso; afterwards from Valparaiso to Mexico, during 1848.

Being ordered to visit Pitcairn Island, Tahiti, and the N.W. group of the Society Islands, as also the Navigators, Friendly, and Feejee Islands, touching at Callao on my way; I left Valparaiso at 6h. P.M. on the 3rd February for Callao, with a very light and variable breeze from E.S.E., but which died away to a calm. The boats of the squadron being unable to tow the ship out of the bay, and the current and swell setting her fast towards the rocks off the lighthouse, I towed back again into 35 fathoms water, and anchored for the night; and at 1h. 30m. P.M. the next day I again departed, with a very light air from the southward, assisted by the boats as before. Soon after clearing the bay it became quite calm, with a dense fog; sounded during the night every hour in from 68 to 74 fathoms, soft mud; being about six miles from the shore. The calm continued till 7 A.M. on the 6th, when a fine breeze sprung up from S.W. The usual course was then shaped for Callao, which we reached at 2 P.M. on the 14th, after having met with the usual southerly winds, and fine weather.

From Callao I weighed at 2h. P.M. on the 16th for Pitcairn Island, with a very light breeze from the southward, which increased towards midnight, steering a S.W.b.W. course. For the first five days the wind varied from S.E. to E.N.E., and we experienced a westerly set of eight miles daily. From the 29th February to the 5th of March the wind was strong from east and E.N.E., with a heavy swell from S.W. On the latter day the Island of Ducie was observed W.$\frac{1}{4}$N., and its S.E. end passed at 11h. A.M., bearing N.$\frac{1}{2}$W. four miles. This island is extremely low, composed principally of sand and patches of

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coral, with its centre covered with shrubs and stunted trees, and is apparently of about four or five miles in circumference; a heavy surf was breaking all around it; nor did there appear any inlet where landing could be effected; and from its want of height, and light colour of its soil and sand, it becomes dangerous at night, or in hazy weather; as, although the day was fine, and tolerably clear, when we made it, it was not more than eight or nine miles off when first seen from the mast head.

On the 6th the wind became lighter, though the same high southerly swell continued, and the westerly current we had generally experienced had ceased. At 5 20 P.M. we sighted Hendersons Island, W.b.N. distant about fourteen or sixteen miles; it being, however, hazy, and darkness coming on before our distance from it could be correctly ascertained, its exact position could not be so well defined as was desirable. The island appears low, though considerable higher than Ducie Island, and is much larger, its size in circumference apparently being eight or ten miles; and is covered with underwood, shrubs, and trees. On reaching Pitcairn Island, and correcting the chronometers, which we found gave us four miles to the eastward of it, as compared with the longitude shown by Captain Beechey, I consider Ducie Island to be in lat. 24° 39′ S., and long. 124° 36′ W.; and Henderson Island to be in lat. 24° 28′ S., and long. 128° 36′ W.; the natives of Pitcairn believe the former to be inhabited, but I doubt it. I also learnt that a party from Pitcairn had visited the latter island in a whaler, who state it to be about eight miles in circumference, and surrounded by a shore reef, containing no water, and little or no land capable of cultivation.

On the morning of the 9th, Pitcairn Island was seen W.S.W., about thirty or forty miles distant, the wind blowing strong from north to W.N.W., attended with squalls, lightning, and heavy rain, with a high sea. On approaching the N.E. side of the island, I stood in for Bounty Bay; but the weather being threatening, I considered it imprudent to send a boat on shore; the afternoon proving finer, a whale boat, containing eight of the islanders, came off, and having hoisted in their boat, I stood off and on during the night. At nine o'clock the next morning, having stood within one and a half miles of Bounty Bay, I landed in their whale boat, keeping the ship's cutter, in which I had pulled into the bay, at an anchor without the influence of the rollers, which at times are very high and dangerous, although on this occasion it was not so, and the sea in the bay comparatively smooth. The surf was, however, much too high for a ship's boat to land; indeed, from the confined spot at which landing only can be effected, with the numerous rocks that surround it, would, I conceive, make it always a matter of danger attempting it in ship's boats, and particularly if without the assistance of the natives as pilots.

The position, size, and other details of this island must be so well known, from its having been frequently visited by our ships of war, that it is unnecessary for me to enter into them; and shall merely observe that the inhabitants appear both healthy and contented, number-

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ing in all 140; they describe the climate as being excellent, and the soil producing every tropical fruit and vegetable, and many of colder climates, and quite equal to the maintenance of 2,000 persons, the only drawback being the entire absence of springs of water; this evil, however, has been greatly, if not entirely, overcome, by the construction of tanks for receiving the rain water, which, besides giving them an ample supply for present use, contain a sufficient quantity to ensure them against the risk of an unusual dry season; indeed, they are in the habit of supplying whale ships with water, when calling for refreshments, as also with fruit and vegetables, pigs, goats, and poultry, which they rear in great quantities. For the last eight years the average number of ships calling annually at this island has been 18, and principally consist of American whalers. Anchorage off some parts of Pitcairn may be had in 30 to 35 fathoms, at a quarter of a mile distance, and even more; but the ground being foul, it would be injudicious to anchor, unless to avoid being driven on shore, in calms, &c. The weather whilst off the island, was fine, though occasionally squally, with rain, and a very great rolling swell; the thermometer ranging from 76° to 80°; barometer, 30·20 to 30·24; and the wind a moderate breeze from S.S.W. to E.S.E.

The Island of Pitcairn, at which I first touched, and which I consider to be in lat. 25° 4′ S., and long. 130° 16′ W., is about twelve hundred feet high, and four and a half miles in circumference, and may be seen, in clear weather, at forty miles distance. Its coast is bold, and entirely free from detached shoals; and rises abruptly from the sea; composed of high and weather-beaten rocks, upon which the surf breaks heavily at all times, preventing any access to it save in two places, the usual landing place being in a very confined inlet or bay on the N.E. side, called Bounty Bay, which possesses a sandy beach of twenty or thirty yards in breadth, but where landing can only be effected in fine weather, and by the assistance of the islanders in their whale boats or canoes, the bay being so studded with rocks, and the rollers so high and uncertain, that it would be dangerous to attempt it in ship's boats, which are usually kept at a grapnel outside their influence. The other landing place, though less difficult, is seldom used, from being at the back, or N.W., side of the island, and distant from the settlement.

Although soundings in from 20 to 35 fathoms may be obtained at some distance, anchorage should only be resorted to as a preventive to a ship's drifting on shore, in calms, &c., as the ground being very foul, great risk would be run of losing the anchor; added to which, a great swell at all times prevails.

On landing, I was much struck with the great extent of rich and cultivateable land which this island possesses, and the beautiful and romantic scenery that surrounded me, composed as it is of rich valleys and precipitous rocks, with a luxuriance of foliage seldom to be seen in islands so small and detached; producing not only those fruits and vegetables usually found in tropical climates, but also a great number of those of more northern and colder temperatures. I was told by

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the islanders, which at this time number 140, (viz., 71 males and 69 females, and of which 47 are under 15 years of age,) that the cultivated land did not exceed 60 acres, which was found sufficient for their present wants; but that the island contained at least 400 acres, and was fully equal to supply a population of 1,000; the only drawback being the want of water, of which necessary article the island contains none whatever: this difficulty, which some years since appeared so formidable to the islanders as to induce them to abandon it, has now been greatly, if not entirely, obviated by the construction of tanks, in which a sufficient quantity of rain water is collected, during the rainy season, that is, March, April, and May, as is necessary for the remainder of the year, besides keeping up a supply in case of a drier season than ordinary occurring. These tanks will of course be enlarged as the population increases.

The island produces Indian corn, yams, Irish and sweet potatoes, tarro, feis plaintains, limes, lemons, oranges, melons, pineapples, papau, sugar-cane, arrowroot, and tobacco; bread-fruit is also grown, but the crop is uncertain. The stock reared comprises hogs, goats, and poultry, all of which are in great profusion.

The fish that frequent its coast are, barracouta, albecore, mullet, giropa, snapper, and small sharks; the smaller sort being taken with nets, and the larger with hook and line; but, from the great depth of water, the labour is so considerable, and so large a number of the fish are taken by the sharks before they can be drawn to the surface, that the islanders do not follow the employment of fishing to any great extent.

The trees that best flourish and are most useful for building and other general purposes, are the miro, purau, cocoa-nut, pandanus, tapau, and a species of gardenia.

The prevalent winds are from S.E. and west. Heavy gales are of rare occurrence, though the island cannot be said to be altogether free from them, a severe one having occurred about three years since, which proved very destructive. Lightning is not frequent. The thermometer ranges throughout the year from 59° to 85°, the feeling produced upon the human frame depending upon the hygrometrical state of the atmosphere.

The climate may be considered as exceedingly good, the islanders subject to but few diseases, none of which are of a virulent nature. Influenza and catarrh are endemic during the rainy season; rheumatism and asthma prevailing, perhaps, more than any other complaint.

The principal occupation of the islanders is cultivation; building and improving their houses, which are the neatest, cleanest, and most commodious, I have ever seen; rearing stock; fencing in their plantations, making tapa, straw hats, fancy boxes, &c., which, together with stock, fruit, and vegetables, they sell and barter for clothing, medicine, artificers' tools, agricultural implements, domestic utensils, and other useful articles, which they obtain from different whalers that call at their island for refreshment; the number of which, prior to 1840, did

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not exceed two or three annually; but for the last four years and a quarter are as follows, viz.:

1844	29	viz.. 1 English, 1 French, 27 American
1845	18	.... all American
1846	49	.... 2 English, 1 French, and 46 Americans
1847	19	.... 1 Bremen, 18 American
1848 to March	3	.... 1 French, 2 American.

Their form of government consists of a chief magistrate, and two councillors; the former being elected annually; who, after his election, nominates one councillor, the other being nominated by the people; and and all cases of difficulty are tried by a jury of seven persons, the accuser and the accused having the privilege of objecting to any prejudiced person being included in it. George Adams, son of John Adams, one of the mutineers of the Bounty, is the present magistrate.

Their form of religion is Episcopalian; their guides the Bible and Common Prayer Book; they have Church Service twice a week, and private prayers every morning and evening.

The children are taught reading, writing, and arithmetic, geography, and history, in a spacious and airy school-room, which is, likewise, their church; their schoolmaster, Hobbs, who also officiates as their clergyman, &c., conducts their instruction with much ability and decorum.

In stature, feature, and complexion, as, also, in their conversation, dress, and manners, these islanders so exactly resemble the people of one of our own villages, *of the better order*, that I could scarcely bring myself to believe they were not such. A few of them, however, are rather darker than the generality of Europeans, partaking more after their half Tahitian descent.

The usual recreations of the elder branches, are the hunting of wild goats, playing at ball, wrestling upon stilts, (at which they are very expert,) and dancing, for which latter purpose they are allowed to assemble one evening in each week. For the more steady and serious part of the community, they have a very fair library, well stocked with books of history, travels, voyages, &c., and, likewise, works of fiction by Sir Walter Scott, Marryatt, Dickens, &c., which have been, from time to time, collected from gifts and purchases from the different vessels that have called at their island, and to which the officers of the *Calypso* liberally contributed.

Flying kites, and playing in the surf on a board, is a favorite amusement with the children, both male and female; also swimming and diving, the adults of both sexes being excellent swimmers.

Of the first generation only six remain.

Four of the inhabitants are foreigners, (of which three are English,) viz., Susan, a Tahitian woman, who came in the *Bounty*, and is now eighty years of age; George Hobbs, who came from Valparaiso about twenty years since, and who, as already observed, acts as their clergyman,

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schoolmaster, and physician, and who is a great acquisition; and John Buffett and John Evans, who came to the island in 1823.

The annual increase of births above deaths, has never yet exceeded seven. The following being the relative numbers for the last ten years:—

	Births.	Deaths.
1837	7	1
1838	5	1
1839	6	1
1840	2	–
1841	6	2
1842	3	2
Total	29	7

	Births.	Deaths
1843	6	2
1844	6	–
1845	6	–
1846	7	–
1847	6	–
1848 to March	1	1
Total	31	3

In visiting these interesting and worthy islanders, it was my gratifying task to convey to them various useful articles which had been, with much praiseworthy benevolence and liberality, collected by the officers of the squadron, and many of the residents, at Valparaiso, consisting of two whale boats, a corn-mill, medicine chest, agricultural and other tools, fishing, writing, sewing, and other materials, cordage, nails, hooks, and various articles of dress for both sexes, all of which proved most serviceable; nor could anything exceed the heartfelt gratitude of these primitive, isolated, and excellent people, who, with tears in their eyes, acknowledged the benefits they continued to receive from the countrymen of their forefathers; and if sincere and grateful prayers were ever offered up for such kindnesses, they surely were by these virtuous and blameless islanders. They consider themselves, in every sense of the word, subjects of Great Britain; and certain I am that Her Majesty possesses not a more attached or loyal people, or one more devoted to Her Majesty's person and government. I could not but be forcibly struck at the warmth of their inquiries for Her Majesty's health as their "beloved Queen," and expressing a hope that they would still be considered as worthy of her countenance and protection.

There being no harbour or anchorage at the island, or any other requisite necessary for the refitting or supplying of ships beyond the mere island produce, is, I consider, quite a blessing; as these simple people thereby escape the contaminating and baneful influence which the crews of such vessels as visit them would inevitably cause, were they enabled to remain any length of time on shore. As it is, one or two boats' crews from each ship, calling occasionally for a few hours for refreshments, have not sufficient time to work evil, even if so inclined; indeed, so little known is crime amongst this community, and so little encouragement given to visitors to commit themselves, that I believe no instance is known of any such attempt; on the contrary, I was told that the conduct, both of the masters and crews of vessels, calling at Pitcairn Island, is most exemplary.

(To be continued.)

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SHIPWRECKS (SOUTH AFRICA.)

Return "from Lloyd's Books, of Shipwrecks on the Coast of Southern Africa, between the Cape and Orange River, and Delagoa Bay, from the 1st day of January, 1838, to the 20th of May, 1852." Ordered by the House of Commons to be printed, 9th June, 1852.

Date when on the Books.	Ship's Name.	Where	Date of Accident*.	Wrecked	Remarks. If on Shore, &c.
1838:					
Aug. 20	Aline - -	C. of Good Hope	- -	W	
June 11	Ballochant - -	Ditto	- -	-	Put back, &c.
Oct. 26	D. of Northumberland	Cape Agulhas	- -	W	
Jan. 12	Eliza - - -	C. of Good Hope	- -	-	Condemned
Sept. 22	Roxburgh Castle	Ditto	- -	-	Leaky
July 26	Zaanstrom - -	Ditto	- -	-	Foundered
—	Argyle - -	Ditto	- -	-	Ditto
			Total	2	5
1839:					
April 22	Asia - - -	C. of Good Hope	- -	-	On shore
Oct. 18	Admiral Cockburn	Ditto	- -	W	
Feb. 8	Dunlop - -	Table Bay	- -	W	
Nov. 26	Eleanor - -	Port Natal	- -	W	
March 25	Juliana - -	Table Bay	- -	W	
May 30	Jeune Edward -	C. of Good Hope	- -	-	Abandoned at
April 3	Protie - -	Simons Bay	- -	-	On shore in
,, 8	Pescadora - -	C. of Good Hope	- -	W	
,, 22	Trafalgar - -	Ditto	- -	W	
			Total	6	3
1840:					
June 24	Black Nymph -	Coast of Africa	- -	-	Sunk
Aug. 28	Burnham - -	Port D'Urban	- -	-	On shore
Dec. 1	Bengal - -	C. of Good Hope	- -	W	
,, ,,	Catharine Jamieson	Ditto	- -	-	On shore
Jan. 21	Elizabeth - -	Algoa Bay	- -	W	
,, 28	Emu - - -	C. of Good Hope	- -	-	On shore
April 29	Friends Goodwill	Paternoster-rock	- -	W	
May 30	Hope (steamer) -	Cape St. Frances	- -	W	
Sept. 29	Howard - -	C. of Good Hope	- -	W	
April 1	Jack Tar - -	Algoa Bay	- -	W	
May 11	Lise - - -	Cape Agulhas	- -	W	
			Total	7	4

* During the years from 1838 to 1842, unable to give the "Date of Accident," it not being at that time mentioned on our books.

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Date when on the Books.	Ship's Name.	Where.	Date of Accident.	Wrecked	Remarks. If on Shore, &c.
1841:					
Feb. 22	Colonel Crocket -	Delagoa Bay	- -	W	
Dec. 27	Malton - -	Walkers Bay	- -	W	
May 10	Orestes - -	C. of Good Hope	- -	W	
Nov. 6	Prince Rupert -	Table Bay	- -	W	
			Total	4	
1842:					
June 20	Adolph Fanny -	C. of Good Hope	- -	-	Condemned at
Sept. 19	Arion - -	Table Bay	- -	-	On shore
Nov. 12	Abercromb. Robinson	C. of Good Hope	- -	W	
,, ,,	Albatross - -	Ditto	- -	-	On shore
,, ,,	Fairfield - -	Ditto	- -	-	Ditto
Sept. 19	Galatea - -	Table Bay	- -	-	Ditto
Nov. 12	Ghika - -	Ditto	- -	-	Ditto
,, ,,	Henry Hoyle -	Ditto	- -	-	Ditto
,, ,,	Hamilton Ross -	Ditto	- -	-	Ditto
,, ,,	John Bagshaw -	Ditto	- -	-	Ditto
May 14	Ligonier - -	Algoa Bay	- -	W	
Nov. 16	Malabar - -	C. of Good Hope	- -	-	On shore
,, 12	Reform - -	Table Bay	- -	-	Ditto
Jan. 26	Sophia - -	Kowie River	- -	-	Ditto
March 10	Sovereign - -	Knysna	- -	W	
Sept. 19	Speedy - -	C. of Good Hope	- -	W	
Nov. 12	Saldanha-bay Packet	Ditto	- -	-	On shore
,, ,,	Sabina - -	Near Cape Recif	- -	W	
,, 30	Thomas Sparks -	C. of Good Hope	- -	-	On shore
July 21	Wanderer - -	Ditto	- -	W	
Nov. 12	Waterloo - -	Ditto	- -	W	
			Total	7	14
1843:					
Aug. 1	Adventurer -	Sandown Bay	May 23	W	
Dec. 21	Abbottsford -	Algoa Bay	Oct	W	
May 6	Bengali - -	Cape Recif	Mar	W	
Nov. 20	Bidston - -	C. of Good Hope	Sept. 12	-	On shore
,, 7	Delhi - -	Algoa Bay	Aug. 26	W	
,, ,,	Elizabeth Rowell	Ditto	,, ,,	W	
Jan. 27	George 4th -	Ditto	Dec. 1	-	On shore
Nov. 20	John and James -	Danger Point	Sept. 1	W	
,, 7	Laura - -	Algoa Bay	Aug. 26	W	
Jan. 9	Mary Steward -	Greenpoint	Nov. 3	W	
May 25	Maid of Mona -	C. of Good Hope	Mar. 30	-	On shore
Nov. 7	Prince Albert -	Plettenburgs B.	Aug. 24	W	
April 10	Sophia - -	C. of Africa, near Grahams Twn	Feb. 2	W	
,, ,,	Sir J. S. Aubin -	Ditto	,, ,,	-	On shore
Nov. 7	Seagull - -	Algoa Bay	Aug. 26	W	
			Total	11	4

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Date when on the Books.	Ship's Name.	Where.	Date of Accident.	Wrecked	Remarks. If on Shore, &c.
1844:					
Dec. 14	British Settler -	Kowie River	Sept. 27	-	On shore
Feb. 1	Hero - -	Port Natal	Nv.17,43	W	
April 4	John Brown -	Lusipara Sands	,, 29, ,,	-	On shore
May 23	Mary - -	Algoa Bay	March 4	W	
April 26	Palestine - -	C. of Good Hope	Feb. 3	-	Lost near
Dec. 13	St. Mungo - -	Cape Agulhas	- -	W	
Nov. 6	Trekboer - -	Algoa Bay	Aug. 21	W	
Dec. 13	Flamingo - -	Struys Bay	October	-	Reported lost
			Total	4	4
1845:					
July 21	Alicia Jane -	Paternoster Isl.	May	W	
Nov. 24	Active - -	Plettenburgs B.	Sept. 9	W	
June 14	Cottager - -	Saldanha Bay	April 8	W	
July 30	Cath. Elizabeth -	Elephant Rocks	May 17	W	
,, 21	Eve - -	Paternoster Isl.	,, ,,	W	
June 14	Horwood - -	Algoa Bay	March 24	-	On shore
,, 19	Hannah - -	Coast of Africa	May 7	W	
April 14	Manlius - -	C. of Good Hope	February	-	Condemned at
Nov. 22	Martha - -	Mossel Bay	Aug. 30	W	
Jan. 29	Poictiers - -	C. of Good Hope	Oct. 1844	-	On shore
Feb. 14	Pilot - -	Algoa Bay	Dec. ,,	-	Condemned
			Total	7	4
1846:					
May 30	Blackaller - -	Algoa Bay	March 24	W	
Feb. 7	Camden - -	Delago Bay	Oct. 1845	W	
Nov. 6	Courier - -	Natal	Aug. 27	-	On shore
Dec. 23	Catherine - -	Waterloo Bay	Oct. 30	-	On shore
April 9	Eliza Ann - -	Near Orange R.	Jan. 12	W	
March 17	Francis Spaight -	Table Bay	" 7	W	
July 1	Gentoo - -	Cape Agulhas	April 20	W	
Dec. 23	Galatea - -	Mossel Bay	Oct. 10	W	
May 30	Jim Crow - -	Algoa Bay	March 24	W	
Oct. 23	Mary Eliza -	C. of Good Hope	- -	-	Condemned
Dec. 1	Port Fleetwood -	Struys Bay	Sept. 15	W	
March 5	Suffren - -	Natal	Dec. 31	W	
May 30	Susan - -	Algoa Bay	March 24	W	
			Total	10	3

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Date when on the Books.	Ship's Name.	Where.	Date of Accident.	Wrecked	Remarks. If on shore, &c.
1847:					
Oct. 21	Aberfoyle - -	C. of Good Hope	Aug. 18	W	Off the
Jan. 12	Catherine - -	Waterloo Bay	Oct. 21	W	
Aug. 5	Chanticleer -	Kowie River	May 19	-	On shore
Dec. 20	Eliza Scott - -	C. of Good Hope	Oct. 20	W	
May 26	Gilbert Henderson	Algoa Bay	March 16	W	
Dec. 28	Ghika - -	Buffalo River	Oct. 17	W	
„ 26	Isaac - -	Struys Bay	March 6	W	
„ 20	Killermont - -	Algoa Bay	Oct. 10	W	
Jan. 8	Mona - -	Ditto	„ 27	W	
„ „	Margaret - -	Ditto	„ „	W	
May 13	Montgomery -	Struys Bay	March 15	W	
Jan. 8	Palestine - -	Algoa Bay	Oct. 27	W	
Sept. 29	Paquetbot Bordelais	Natal Bay	June 28	W	
Jan. 8	Resolution - -	Algoa Bay	Oct. 27	W	
April 20	Robert - -	False Bay	Feb. 13	W	
„ 21	Rambler - -	C. of Good Hope	„ 20	-	On shore
Jan. 8	Sophia - -	Algoa Bay	Oct. 27	W	
June 1	Sylphide - -	Coast of Africa	- -	W	
Oct. 21	Swiftsure - -	Plettenburgs bay	Aug. 8	W	
April 19	H.M.S. Thunderbolt	Algoa Bay	- -	W	
			Total	18	2
1848:					
April 8	Bittern - -	C. of Good Hope	Jan. 18	W	Near the
June 5	Barrys - -	Struys Bay	April 4	-	On shore
Feb. 26	Conch - -	Umzinvooboo R.	Nov. 7	W	Near
May 9	Chanticleer -	Port Frances	March 1	W	
Sept. 2	Chieftain - -	Morille Point	Dec. 3	W	
Oct. 27	Foxhound - -	Algoa Bay	- -	-	Condemned
May 23	Harriet - -	Port Beaufort	March 8	W	
June 5	Johanna - -	Algoa Bay	April 5	W	
Dec. 12	Justitia - -	Waterloo Bay	Sept. 28	W	
May 8	Lady Leith -	Algoa Bay	Feb. 27	W	
June 5	Martha - -	Ditto	April 5	W	
Dec. 8	Mary - -	C. of Good Hope	Oct. 4	-	
June 5	Nancy - -	Mossel Bay	April 4	-	On shore
Jan. 26	Saldanha bay Packet	C. of Good Hope	prev N.22	W	
June 5	Waterloo - -	Caywoods Bay	April 5	W	
			Total	11	3
1849:					
Sept. 17	Bell Isle - -	St. Sebastian B.	July 15	W	
April 30	Claudine - -	Cape Agulhas	Feb. 21	W	
Nov. 13	Douglas - -	On the Lee Bank	Aug. 28	W	
Oct. 26	Enchantress -	Near Greenpoint	„ 24	W	
May 18	Frances Burn -	Algoa Bay	March 25	W	
Sept. 17	Kate - -	Mossel Bay	July 16	W	
„ 14	Zafiro - -	Table Bay	- -		Condemned
			Total	6	1

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Date when on the Books.	Ship's Name.	Where.	Date of Accident.	Wrecked	Remarks. If on Shore, &c.
1850:					
April 18	Amelia Mulholland	Algoa Bay	Feb. 16	-	On shore
Aug. 10	Arab - -	C. of Good Hope	June 1	-	Ditto
Sept. 11	Asiatic - -	Algoa Bay	„ 9	-	Ditto
„ 12	Aigle - -	Zietzekama coast	- -	-	Not stated
„ „	British Settler -	Off Jacobs Bay	- -	W	
April 16	Child Harold -	Table Bay	Feb. 12	W	
Nov. 18	Cockburn - -	Ditto	Sept. 16	W	
Aug. 23	Duch. of Buccleugh	Cape Agulhas	June 7	W	
Dec. 11	Doris - -	Algoa Bay	Oct. 17	W	
Oct. 30	Elephanta - -	Ditto	- -	-	Sold at
Sept. 12	Grindlay - -	Cape Recif	June 9	W	
Dec. 11	John Witt - -	Algoa Bay	Oct. 17	W	
Sept. 27	Minerva - -	Natal	June 28	W	
Dec. 11	Mary Ann - -	Algoa Bay	Oct. 17	-	On shore
April 16	Nepaul - -	C. of Good Hope	Feb. 11	W	
Dec. 2	Nadinus - -	Coast of Africa	- -	-	Condemned
Sept. 18	Prince Charlie -	C. of Good Hope	July 6	W	
„ 12	Queen of the West	Zeitzekama coast	- -	W	
„ „	Royal Albert -	Table Bay	June 25	W	
„ 30	Ringfield - -	Off C. of G. Hope	July 25	W	
Dec. 5	Saxon - -	Ditto	- -	-	Aband. on fire
			Total	13	8
1851:					
Nov. 6	Albinia - -	Algoa Bay	Sept. 13	W	
Dec. 5	Actif - -	C. of Good Hope	Oct. 11	-	On shore
„ „	Chartley Castle -	Table Bay	„ 8	-	On shore
Sept. 10	Fanny - -	Ditto	July 29	-	On shore
Nov. 6	Foam - -	East London	Sept. 13	W	
April 4	James Shepherd -	Cape Agulhas	Feb. 8	W	
Dec. 5	Morayshire -	Table Bay	Oct. 11	-	On shore
April 28	Nanette - -	Coast of Africa	Dec. 15	W	
Sept. 10	Nimrod - -	Table Bay	July 25	W	
Aug. 12	Propontis (S.) -	Simons Bay	„ 1	-	Struck in leav.
June 11	Reflector - -	St. Helena Bay	April 17	W	
Nov. 6	Royal Saxon -	Table Bay	Sept. 30	-	On shore
„ „	St. Helena - -	Plettenburgs B.	- -	W	
Dec. 5	Thomas Carty -	Table Bay	Oct. 11	-	On shore
Sept. 10	William Foster -	Cape Recif	July 17	W	
			Total	8	7
1852:					
April 6	H.M.St. Birkenhead	Simons Bay	Feb. 26	W	At Danger Pt.
Jan. 3	Diadem - -	Plettenburgs B.	- -	W	
March 15	Herschell - -	Table Bay	Jan. 23	W	
April 2	Juno - -	Cape Aguilhas	March 2	W	
May 8	Natal - -	Espeigle Bay	„ 5	W	
Jan. 12	Rachel - -	C. of Good Hope	- -	W	Near the
„ 31	West Indian -	Algoa Bay	Dec. 7	W	
			Total	7	

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SUMMARY.

	WRECKS.	On Shore, &c.	TOTAL each Year.
1838	2	5	7
1839	6	3	9
1840	7	4	11
1841	4	-	4
1842	7	14	21
1843	11	4	15
1844	4	4	8
1845	7	4	11
1846	10	3	13
1847	18	2	20
1848	11	3	14
1849	6	1	7
1850	13	8	21
1851	8	7	15
1852	7	-	7
TOTAL	121	62	183

NAUTICAL NOTICES.

THE GREAT BARRIER REEF, AUSTRALIA.

The following account of the escape of the barque *Caldew* from a labyrinth of dangers off the Great Barrier Reef on the N.E. coast of Australia, is of importance to the masters of ships. We transfer it to our pages from the Sydney *Shipping Gazette*, of the 3rd of April, last, along with the judicious remarks of Captain King, R.N., whose experience of the Australian coast entitle them to consideration. When will the masters of our merchant ships, or their owners, learn the value of the Admiralty charts over those of chart-sellers, which are compiled from them? The *Caldew* happily escaped wreck; but, had she been lost, it might have been set down to the saving of a few shillings for the purchase of a good chart!

Gentlemen,—On my recent voyage from China hither, I was compelled by stress of weather to attempt the passage through Torres Straits, from the westward, a passage hitherto but seldom attempted; and, as I met with serious difficulties and dangers, I believe that a brief recountal thereof may prove of service to any of my brother shipmasters who may have occasion to pursue the same route.

I will premise, that when I left the Strait of Allas it was my intention to have proceeded hither through Bass Straits; but a succession of heavy gales from S.W. obliged me to alter my course. I accordingly gave up hopes of getting to the southward, and bore up and ran for Torres Straits, and on the

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5th of February ultimo I made Booby Island, where, at 9 P.M., I anchored in eight fathoms water. On the morning of the 6th, I got under way with a fine breeze from the westward; and at noon of the 9th was in lat. 9° 29′ S., long. 144° 4′ E., having anchored but twice in my passage through the Straits. I then steered an easterly course, and, after clearing Portlocks Reef, gradually hauled to the southward, the wind still continuing fresh from the westward, until the 14th, when, in lat. 14° 55′, long. 152° 40′, I lost the westerly breeze, the wind hauling to the southward and eastward, with light breezes and fine weather. I now proceeded to the southward, and on the 18th was in lat. 20° 22′, long. 151° 50′, which, according to the charts, ought to have placed us close to the Vine, or Horse Shoe reef; of which, however, nothing could be seen, although a vigilant look-out had been kept all day; I having been on the foreyard myself from noon. I steered S. by W. five miles, and, as I thought that the reef must have been incorrectly laid down, I tacked ship to the N. and E. fourteen miles, and then again to the S., keeping a mast-head look-out the whole of the time. No reef, however, was to be seen; and I am fully satisfied that the reef does not exist in the position laid down in Norie's chart. I was now making a south course, and, having run upon it forty-two miles, the ship at 10 15 P.M., being then in lat. 20° 59′, long. 152°, struck upon a reef, whose existence was barely indicated by a ripple. I immediately threw all aback, hoping to force the ship off; but there appeared to be a strong current driving her on the reef, and in a few moments her stern struck, unshipping the rudder, breaking the wheel, and, for the time, rendering the ship unmanageable. The point where she struck was, however, but a detached patch of the reef, and in a quarter of an hour we were afloat again, but in such deep water that no anchorage could be obtained. In a moment or two afterwards, the ship again struck, and so heavily, that I at once gave orders to hoist the boats over the side, and get them in a serviceable condition. By a Providential interposition, the ship again floated off into deep water; and, after sounding the pumps, and finding that the staunch little vessel was making no water, I congratulated myself on our escape, when suddenly she struck the third time, and that very heavily, in shallow water; so that it now appeared a question if we should be able to get her off. In this serious dilemma I prepared a hawser and kedge, and got everything ready to run, hoping that by daybreak I might be able to haul the longboat off with the bower anchor, and by this means heave the ship off.

An objection may possibly here be made to my having resolved to delay this attempt until daybreak, but I will observe that we were surrounded by breakers, and the points of the rocks were visible. This prevented my lowering the boats, which were kept hanging in tackles, and properly provisioned. However, by having the sails flatted back, the ship about 1 30 A.M. again floated into deep water, which presented a fair anchorage. I got the boats in, and at daybreak lowered the quarter-boat, and reshipped our rudder. I then proceeded to the southward under easy sail, steering by tackles as the wheel had been broken. At 7 30 we were nearly surrounded by reefs and two dry sand-banks; I accordingly wore ship to the N.N.W. and stood on until noon, keeping a mast head look out. At that hour breakers were reported on both bows and ahead. By observation, we were then in lat. 20° 53′, long. 151° 58′. I tacked to the S.W., standing on for four hours in that direction, and sailing among small patches of shallow water. At 4 P.M. I saw an extensive reef on the lee bow, and a dry sand bank ahead, surrounded by a reef. There were also several small patches on the weather bow. I directly tacked ship to the N., and my critical situation will be imagined, when it is remembered that night was approaching, no anchorage to be obtained, and reefs and sand banks enclosing us in all directions. I, after much deliberation, deemed it the most prudent course to retrace our course by the same route; and most

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fortunately at 7 30 P.M. I found bottom in fifteen fathoms water, and immediately brought up for the night. At daylight I found that we were about three hundred yards from a sand bank and reef. I got under way, and, with a strong wind from the south-east, ran between these dangerous neighbours, and continued to run between shoals and reefs until 11 30 A.M. At noon I found by observation that we were in lat. 21° 32′, long. 151° 30′. By this observation, and by Captain King's chart, I found that we were again inside the Great Barrier Reef. At 2 P.M., I saw two dry sand banks, which are laid down by Captain King, and at 4 sighted the High Peak Island. Not knowing what damage the ship might have sustained, I deemed it advisable to approach the coast, and work down in shore, which I did as far as Cape Capricorn, when I worked up between the Capricorn Group and Swaine's Reef, but did not weather Breaksea Spit and Sandy Cape until the 8th instant.

All danger was now past, and we arrived safely in Port Jackson on the 17th instant. In conclusion, I will venture to express my firm belief that the reefs which threatened a disastrous termination of the *Caldew's* voyage are, in reality, an extension of the Great Barrier Reef, and that further to the eastward this extension, in many small patches, is rapidly increasing.

I am, gentlemen,
Your obedient servant,
WILLIAM JOSEPH SNOW,
Port Jackson, March 27, 1852. Master barque *Caldew*.

Gentlemen,—I have read with much interest, in this day's *Herald*, the account of the *Caldew's* voyage between Torres Straits and Sydney, and beg to offer to your seafaring readers a few remarks upon the course pursued by Captain Snow, whose seamanlike conduct in extricating his ship from the dangerous position in which she was placed, is deserving of the highest praise.

It would have been very useful had the ship's course, in passing through the Straits been given more in detail. Whether the barque, on leaving Booby Island, passed between the Prince of Wales Island and the N.W. reef and emerged from the Barrier Reef by the Murray Island passage, or by the more northern and better one, known by the name of Blighs Entrance, does not appear. One thing, however, is clear, namely, that the passage to the open sea was made without accident or difficulty; for the "serious difficulties and dangers" afterwards experienced by the *Caldew*, being six or seven hundred miles to the southward, had nothing to do with the character of "the passage through Torres Straits from the westward." Had the *Caldew*, after leaving Portlocks Reef, continued her course to the eastward, without making southing, even as far as New Caledonia, she would have avoided the Barrier Reef, and would probably have made a fair average passage. But the dangers she encountered were those common to any vessel which, in using the outer passage to Torres Straits, keeps too close to the outlying reefs, which were known many years since, and more recently in detail from Captain Yule's survey, to fringe the barrier reef to a considerable distance.

With respect to the statement made by Captain Snow of the incorrectness of the position assigned to Vine's Horse-shoe Shoal, I would explain, that it was placed by me on the Admiralty chart, on the authority of Lieut. Vine himself, in the year 1821, very shortly after it had been discovered by him. The account given me was as follows:—"Its northernmost end is in lat. 21° 5′, and long. 151° 50′; it presents its convex or outer edge as far as 15 miles to the south and east." Captain Snow supposes from Norie's authority, that its lat. was 21° 20′, and so questions the accuracy of the chart. Its extent to the south and east was evidently estimated by sight, and may have been too much; and perhaps the longitude may have been erroneous to the extent of a few minutes, but I think that the position assigned to it by Lieutenant Vine

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cannot be very incorrect, as it was placed by chronometer a few days only after leaving Sydney.

In approaching the positions assigned to this and similar shoals, great caution should be used, and their vicinity avoided as much as possible, for the sea thereabouts is strewed with many shoals, some of which may be yet unknown.

It seems strange to me that merchant ships are not better supplied with Admiralty charts. It is well known that Norie's, and other compilations, are corrected from time to time from Admiralty charts; why not, then, use the originals, particularly when they can be purchased for a very small sum compared with the price of Norie's General Chart.

Yours, faithfully,
PHILIP P. KING,
Captain, R.N.

SAILING DIRECTIONS FOR ENTERING THE PORTS OF TAHITI AND MOREA.

In the Island of Tahiti there are eleven good harbours, namely, Taunoa, (properly Taaone,) Papeeti, Rautirare, Temarauri, Tapueraha, Vaiau, Vaiurua. Vaionify, Tefaaoô, Pueu, and Vaitoare; in addition to these harbours, which are the principal ones, there are the following smaller and inferior ones, namely, Taapuna, Maraa, Teahifa, Hotumatuu, Teputa, Havae, Temotoi, Hitiaa, Mahaena, and Papaoa.

Taaone on the N.W. side (known as Taunoa,) has both a good entrance and anchorage. The latter is in 13 fathoms on the east side of the bay; from this harbour there is a good passage inside the reef to Papeeti, the harbour of Taaone may be known by a peculiar mountain at the head of Faataua valley, much resembling a crown, when the crown opens on the eastern side of the valley you are abreast of the passage.

Papeeti Harbour is perhaps the best in Tahiti, the passage through is narrow, in consequence of a bar extending from the southern reef two thirds across the passage; in entering it is necessary to keep close on the larboard hand.

Taapuna Passage, on the West side, is about five miles to the southward of Papeeti, and is small and difficult, having shoals in the centre of it. Course in N.E.b.E., when inside the reef keep close to the east side to avoid the shoals, which can be seen from the mast-head; when in, haul to the northward into good anchorage. There is a good passage from Taapuna to Papeeti inside the reef. At Taapuna the current sets out. On the shoals the water is from 1½ to 3 fathoms; between them the water is much deeper.

Maraa Passage is on the S.W side of the island; course in, N.b.E. Keep close on the starboard hand after entering the outer reef.

Pass if possible to the eastward of the shoals which lay in the inner part of the passage; but a vessel can pass either between or to the westward of them. Close to the east shoal on the eastern side is a small sunken patch, but this is only to be feared by vessels of a heavy draught of water. Good anchorage in shore abreast of the passage, off a water run, There is a good passage for ships inside the reef from Maraa to Papara, where they can anchor at the Piraa orie; the current sets out at Maraa to the S.E.

Rautirare Passage at Papeuriri is good, with a fine harbour. In standing in for Papeuriri there are two small islands to be seen inside the reef. These two islands are a good guide for the passages of Rautirare and Teahifa. The eastern island is situated close to the east side of Rautirare Passage; the other

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is about a mile to the westward; and the passage of Teahifa in Maripehe to the westward of that.

In entering Rautirare keep on the eastern side, particularly if the wind should be light, as the current sets down on the lee or western reef: the course in is N.N.W. After entering the reef keep on the starboard hand. There is good anchorage under the island, although anchorage can be had in any part of the bay; the best is in the next bay to the westward near the island. Keep close to the point in passing, for although the passage is good it is narrow. In leaving this anchorage, you have the advantage of the passage of Teahifa, it is narrow, but safe at most times. Keep close to the east side of the reef to avoid a bar which runs from the west side half passage.

The course, in Teahifa Passage, is N.N.W.; anchorage in shore of the island, or to the westward half a mile off Mairipehe.

Temarauri at Papeari, on the south side of the island, near the isthmus, is a good passage. Course in, N.W.¼W. There is a small shoal in the centre of the bay; but it can easily be seen from aloft; you must pass to the westward of it, then steer for the point of Motuoini, which must be passed close. There is good anchorage round the point to the westward; small vessels can run to the westward and go out of Rautirar at Papeeuriri; the current sets out of Temarauri to the southward.

Hotumatuu, on the south side of the isthmus, is direct in for Taravao, but it can only be attempted by small vessels having a fair wind; there are two or three shoals in the passage, but they are seen from aloft.

Teputa Passage is close to Hotumatuu, facing the Taiarapu side. It is narrow, but has plenty of water and free from shoals; as it can only be entered with a fair wind, it can be seldom used. but it is a good passage to go out by as the wind in general is from off the isthmus; the current sets out to the southward.

Tapuaeraha, on the west side of Taiarapu, has a fine and large entrance. Course in, N.E.b.N. In entering, keep well on the south side, as from the north side the shoal or spit runs off some distance; in general, here, there is a heavy rolling sea; after you are inside, you can anchor in any part of the harbour. There is a good passage inside the reef from this harbour to Taravao, which is generally taken by ships, more especially heavy ones. It is, however, rather difficult for large ships to enter this harbour of Tapuaeraha, as the wind mostly blows out, and it is not prudent to tack through fear of missing stays, the wind being so baffling off the mountains. The best way of entering is to round the reef as close as possible, then luff up, clew all up, and let go the anchor; then warp in till you have sufficient room to make sail to work up the harbour The current sets from this passage to the southward.

Havae, at Teahupoo, on the south side of Taiarapu, has a good entrance, course in, N.b.E.¼E.; the anchorage in the bay is only good in fine weather. For small vessels there is a narrow passage to the westward, close in shore into the next bay, where the anchorage is safe. There is a passage for small vessels inside the reef from Teahupoo to Mataoae.

Vaiau, on the S.S.E. part of Taiarapu, has a fine harbour; course in, north. After entering the reef, haul up to the N.E., towards a low point into good anchorage; the current in this passage sets to the S.E.

Off the Pari, on the S.E. part of Taiarapu, is a dangerous rough place full of sunken shoals, extending two or three miles off the land, and about four miles along the coast, finishing at the Motoi, which is to be known by two small islands. There is an inferior passage at the Motoi; course in W.N.W. In going in or out, haul close round the north reef to avoid the sunken shoals; having the two islands on the starboard hand in entering, haul round the islands to the northward into anchorage.

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Vaiurua, on the eastern part of Taiarapu, has a good harbour; course in, S.W. This harbour is about two miles north of the islands at the Motoù.

Vaionifa, on the N.E. part of Taiarapu, has a fine entrance; course in S.W. b.S.; the anchorage is extensive. After entering in hauling to the southward, there is a shoal; vessels can pass on either side of it. There is a passage inside the reef from this harbour to Vaiurua. Vessels can enter and depart by either as the winds may allow. There is also a good passage from this harbour close down to Tautira point.

Tautira Bay is exposed to the westerly winds, and only to be recommended in fine weather. The best anchorage is close on the N.E. side under the point; on the S.W. side of the bay is a good harbour, called Fefaaô. Vessels entering the bay of Tautira should steer to the S.W., and then enter the reef to good anchorage; from Tefaaô vessels can go inside the reef to Pueu.

Pueu has a good passage; course in S.S.E. in entering, haul round to the west side of the reef, and steer to the westward round the first point, and come to anchor off the village. In leaving Pueu, vessels can go out of a passage to the westward.

Vaitoare Harbour, about two miles north of the isthmus, has a fine and safe anchorage. Vessels can enter or depart from the northward or southward; but the northern passage is the best.

Tematoe. About two miles to the southward of the point of Hitiaa, there is a good entrance into the reef, called by this name of Tematoe; vessels can pass inside close to the point of Hitiaa, into good anchorage.

Hitiaa is on the N.E. part of Tahiti; but the harbour is not good, the bottom being rocky. After entering the reef, haul to the northward, and anchor near a small island. In leaving Hitiaa, vessels can go out by Mahaena, the best anchorage at Mahaena is in shore of a small low island, known as Nansouty's Island.

To be Continued.

Aitkin's Rock.—A report has appeared in the *Greenock Advertiser*, and thence copied into the *Shipping Gazette*, that this rock was *seen* on the 21st ult. in lat. 55° 15′ W. and lon. 9° 56′ W. by the "officers and crew" of the barque *Fingalton*, Craig, of Glasgow, from Quebec to the Clyde. It is now above twenty years since this reputed danger has been expunged from our charts, after a careful search by Captain Vidal, R.N., the account of which will be found in one of our former numbers, and which was published more at length along with a chart of his track, in the first volume of the Geographical Society's Transactions. Its revival on such authority, without soundings being had, is very improbable.

Her Majesty's Government has been officially informed of the following lights having been established on the north coast of Spain:—

Cape Machicaco.

On the 21st instant a revolving light, displaying flashes every four minutes, in latitude 43° 28′ 0″ N. and longitude 2° 49′ 10″ W of Greenwich, was lighted, at an elevation of 264 feet above the level of the sea, and in clear weather can be seen 18 miles.

Point Galea.

A fixed light has been placed, on the 21st instant, on the Point of the Fort Galea, being the eastern entrance of the Port of Bilboa, in 43° 22′ 36″ N. and 3° 3′ 46″ W. of Greenwich, at an elevation of 386 feet above the level of the sea, and in clear weather is visible 22 miles.

Cape Penas.

A revolving light was established on the 15th instant on Cape Penas, in 43° 22′ 20″ N. and 5° 47′ 42″ W. of Greenwich, displaying flashes every 30

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seconds, at an elevation of 343 feet above the level of the sea, and in clear weather may be seen twenty miles.

The Isthmus of Darien.

Terra Firma Proper, on the great Western Continent, was one of the earliest discoveries of the great Columbus, and is now known to form a large part of that isthmus which connects, by a continued link of land, North and South America. It extends in a N.W. direction from the lat. of 8° N. in the meridian of 76° W. long, to the lat of 16° 30′, and 18° 30′ N. in the meridian of 95° W. long.—a distance of upwards of 1,300 geographical miles. The narrowest parts are, first, between Chagres and the Bay of Panama—33 miles in a direct line; second, through the province of Chiriqui in Veragua, 40 miles, in the meridian of 82° W. long.; thirdly, from near Alvarado, in the Atlantic, to the Bay of Tehuantepec, in the Pacific—a distance of 92 geographical miles; and, fourthly, from the mouth of the river St. Juan, on the Atlantic, in lat 10° 40′ N., to Nicoya, on the Pacific—in a direct line 120 geographical miles, but from Matena only 95 miles; and, fifthly, from the Gulf of Dolce, at the bottom of the Bay of Honduras to Trinidad, in the Pacific, 70 geographical miles.

Ever since the discovery of this isthmus, and it became known that it was bounded on its southern shores by the Great Pacific Ocean, the attention of Europe has been directed towards it; but while the whole of the west coast of America to the 42° of N. latitude remained under the dominion of Spain, and was sealed by her from the commerce of foreign nations, little opportunity was had of ascertaining the capabilities of this isthmus, and the means afforded by it of communicating with the Pacific Ocean from the shores of the Atlantic. But since the authority of Spain was overthrown in that quarter of the world, and the power and dominion of the United States has been extended to the shores of the Pacific, the increased communication with the islands in the South Sea, and the great rise and extending trade of the British colonies of Australia, Van Diemen's Land, and New Zealand, the attention of the world has been steadily and strongly directed to find the easiest and most practicable route by which this isthmus can be crossed, in order to afford a more rapid and safe communication with all the shores of the Pacific and the islands in the South Sea than by the long and dangerous navigation round Cape Horn. Every practicable point has been examined, and the desirable object can no longer remain uncertain or doubtful, and is, it may now be confidently stated, about to be attained.

There are eight points where the communication from the Atlantic to the Pacific is more or less practicable, and more or less difficult. First, by a junction of the head waters of the river St. Juan, which fall into the Pacific in 4° N. lat., with the head waters of the Atrato, which, after a course of 210 miles almost due north, falls into the Atlantic in the Gulf of Darien. This junction is easiest through the valley of Rapadura, in which valley canoes can pass in water, during the rains, from river to river. But this valley is of high elevation, and both rivers very rapid, the distance from sea to sea 350 miles, and through very unhealthy spots. The Spanish government, about 70 years ago, had decided to try a communication at this place, but the breaking out of the American war and the French revolutionary war, diverted their attention from the project. Secondly, a line from the mouth of the river Tupica or Cupica, on the Pacific, in lat. 7° 30′ N. to the Atrato, by the river Naipi, a deep stream, and the distance from the Atrato to the sea, only about 60 miles. The summit level, however, of the valley near to the head waters of the streams mentioned, at about twenty-five miles from the Pacific, is at least 400 feet, and the line subjected to the dangerous navigation of the Atrato. Thirdly, the line from the mouth of the Atrato to the Gulf of San Miguel, a

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distance of 65 geographical miles. The head waters of the streams, which here run in opposite directions to the points adverted to, approach near each other, but the lowest summit level of the land between them is at least 500 feet above the ocean. The mouth of the Atrato, beside being dangerous from moving sand banks, is very swampy and most unhealthy. Thus Scott well describes

By Darien's sands and deadly dew;

and the shores of the Gulf of San Miguel are not much, if anything, better. Fourthly, there is the line from Port de Escosses, or New Edinburgh, a good port on the Atlantic side, to the head waters of the very crooked and rapid river Chuqumaqua, which runs into the Gulf of San Miguel, and whose sources are only about 10 miles west from New Edinburgh. The Gulf of San Miguel runs about 22 miles into the country, and is of a good depth of water, but the summit level of the dividing range to the west of New Edinburgh is at least 500 feet (some accounts say 800 feet) above the level of the sea, which, as in the previous lines, must render a ship canal very difficult, if not impracticable, by any of these routes.

Fifthly, we have the line from Chagres to Panama, or rather from Navy Bay, near it, the shortest of the whole, and by which a railroad (estimated to cost £2,500,000) is now in course of construction. The summit level of this line is about 360 feet above the sea, reduced by much tunnelling about 90 feet. Chagres and Navy Bay have the most deadly climates, and Panama is by no means healthy, while large vessels can only find anchorage at three miles out from the town. Vast expense must, therefore, be necessary to construct a pier there, and a breakwater in Navy Bay to shelter vessels from the north-east winds, to which it is quite exposed, especially in the winter months. Sixthly, and passing to the Tehuantepec line, the harbours on both sides, especially on the Atlantic side, are bad, and unapproachable on the Atlantic during the winter months' northers. The line has to pass a large river to the east of the southern end of the Sierra Madre chain, which river has worn itself a bed about 500 feet deep, through earth of a volcanic mould. The elevation also is here great, and consequently a road is now only talked of, but will be difficult; a ship canal may be considered impracticable. Seventhly, we have the Juan de Nicaragua line, to which the public attention is now strongly directed, from the mouth of the San Juan, on the Atlantic, is by the river 101 miles, and in a direct line nearly 70 geographical miles to Lake Nicaragua. The river is as large as the Guadalquiver, in Spain, and all around its mouth the country is very unhealthy. Lake Nicaragua, a fine body of water, is 129 feet above the level of the Pacific, and in its deepest part 60 fathoms, shallowing to 12 and 5 fathoms in its north-west extremity. From a point to the south of the town of Nicaragua to the Pacific is about 15 miles, and the summit level of the valley, running between active volcanic mountains, is about 20 feet. There is still a narrower point to the south of the town of Granada, where the distance to the sea is only 12 miles, but by a line more difficult. Lake Nicaragua is about 120 miles long and 50 broad; and Lake Managua, or Leon, is 18 miles north-west of it. This lake is about 60 miles long and 35 broad, and ranges from 2 to 6, 12, and 40 fathoms deep. The plain of Leon is about 28 feet above it, the elevation above the sea about 200 feet, and the distance to the Pacific only about six miles, with a low ridge rising about 60 feet above the plain between them. Three lines are spoken of for a canal in this quarter. First, by deepening the river, or running a canal near the river San Juan, and then from Lake Nicaragua to San Juan de Sur, on the Pacific. But the anchorage there is not good and is subject, like the rest of the Gulf of Papagayo, to sudden gusts and storms of wind from the adjacent mountains; second, through the plain of Leon to the fine port of the Realejo, lat. 12° 29′ N., and long. 87° 6′ W.; and, thirdly, by the same line to the splendid and sheltered Gulf of Fonseca, lat. 12° 40′, long. 88° 30′ W. In the latter case the distance from the mouth of San Juan will

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be nearly 300 miles, and to Rialejo 235 miles. All this country is filled with active volcanoes; 11 such can be seen from Leon, and one very formidable one broke out about eighteen months ago in the plain of Leon, at a short distance from Lake Managua. Mr. Squier estimates the cost of constructing a canal on these routes, according to the distance on the land, at from £6,000,000 to £20,000,000 sterling. It is certain the cost must be very great.

It is evident that a ship canal can only be constructed at a vast expense, if at all practicable in this quarter. The cost would be many millions. We must, therefore, next turn to the proposed Chiriqui line, and the cheap mode of communication there at present contemplated. At this point the distance from sea to sea is only 40 geographical miles, and the summit level of the line of valley for the road is only 160 feet, and that for a short distance only, which may be reduced by some cutting to below 140 feet above the level of the sea, the lowest summit level that can be obtained in any part of the isthmus. There also the whole line of country is fertile, fruitful, and healthy, without any volcanoes to endanger or annoy. On either side are splendid and most extensive bays, completely protected against all winds, with deep water, and excellent anchorages close to healthy shores. The expense of construction of the whole communication is very low, and the mode of conveyance is such that, as in the United States, horses with carriages, passengers, and luggage, &c., can easily travel at the rate of eight or nine miles per hour. Hence cheapness of conveyance, with sufficient facility, becomes quite apparent. On a fact so obvious and plain it is unnecessary to dilate or to extend remark. In a traffic to all parts of the countries within the circle, at present exceeding £40,000,000, it is obvious that the revenue to be obtained on this route from passengers, specie, and light but costly merchandise must be very great.

Operations at Rangoon.

On the 3rd June a detachment of 230 men was embarked at Rangoon on board the Hon. Company's steamer *Phlegethon*, accompanied by the boats of H.M. ship *Fox*. The force proceeded to Pegu—took that city by storm on the 4th, after some heavy skirmishing, with the loss of one man (a seaman) killed, and six wounded. This loss, however, was mainly occasioned by the enemy being allowed to attack the boats left under charge of a few of our people. After destroying the fortifications of the place, the expedition returned to Rangoon. It is to be feared this will afford no permanent relief to the Peguers, who are again left to the tender mercies of the Burmese.

Martaban was attacked by the enemy on the 26th May. The Burmese showed great resolution on this occasion, making their assault openly by daylight, and being with some difficulty driven off.

We have news from Rangoon to the 21st June, at which time all was quiet, the weather moderately fine, and the troops in good health.

The following describes more particularly the operations for the relief of Pegu:—

The most heart-rending accounts having been received of the cruelties practised by the Burmese troops on the people of Pegu, believed friendly to our interests, General Godwin determined to dispatch a small force to drive the ruffians from the town, which to be left hereafter in the hands of the inhabitants, as our force was not considered strong enough to spare men for a frontier garrison, as Bassein or Martaban might any day draw for reinforcements on Rangoon. On the 3rd of June 100 men of H.M. 80th, 100 of the 67th Bengal Native Infantry, and 30 Sappers and Miners—230 in all—under Major Cotton, of the 67th, were embarked on board the steamer *Phlegethon*, and proceeded

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up the river. The party was intended to have been double this strength, but the native boats proposed to have been employed proved unsuitable, and its strength was reduced—the saving of time being matter of the first importance. At seven P.M. the expedition reached the mouth of the creek opening on the town. At two o'clock next morning (4th June) the troops left the steamer on board the men-of-war and other boats ready to start with the turn of the tide. After a hard pull of three hours some firing was heard on the west bank of the river. The troops were immediately landed, and skirmishing commenced. Commander Tarleton, of the *Fox*, landed with his seamen, and drove the Burmese before them, when the enemy got into their rear and plundered their boats; the timely return of the crew prevented any serious damage. At three P.M. the boats crossed over to the right bank of the river, nearly opposite the great Pagoda, in which the enemy were established. The Burmese now moved boldly down upon us, with a view of attacking us. Major Cotton very prudently restrained the ardour of his men, and forebade any return of their fire till the enemy were close upon him. When the fitting moment arrived, the Europeans and Natives were at once let slip, and drove the Burmese back in an instant, chasing them into and through the Pagoda. No resistance whatever was offered, and their last man had escaped before we had well entered. A considerable quantity of arms and grain were captured. The grain was made over to the citizens, who complained that their families were starving in the jungles hard by, and a supply of arms and ammunition was placed at their disposal. It seemed somewhat doubtful whether they would have pluck enough even when thus equipped, and with the British in their neighbourhood, to defend themselves; and it was considered not at all unlikely that within a week of our retirement the Burmese would have re-occupied the town. It will not be very difficult to drive them forth again when this becomes requisite. On the 5th the whole force re-embarked and returned to Rangoon. On the way downwards the *Phlegethon* struck on a bank and broke her back. At the capture of Pegu, expected at home to be so dangerous and so difficult, we had one seaman killed and two wounded—this was the sum of our casualties. The troops at all the three stations are healthy and comfortable; the sickness not greater than if they had been cantoned at their own presidencies, No tidings have been received from Ava, and the golden-footed monarch is patiently waiting to see what the season will do for him—his prospects in this way being gloomy enough—and prepared to await us at Ava, where we will most assuredly meet him early in September, if not sooner.

NEW BOOK.

THE MIDSHIPMAN'S COMPANION, *by Captain Liardet, R.N., Author of Recollections on Seamanship, Discipline, &c. Woodward, Portsea; Longman, London.*

EVERY page of this little book abounds in excellent advice for the guidance of a young officer to that conduct as a midshipman which, if adopted, must gain him the esteem of every one with whom he performs the duty of his station. Captain Liardet has conferred a benefit on his profession by sowing these good seeds of future greatness in the naval officer. They are contained in twenty-four letters, and embrace general principles and rules of proceeding, under all the conditions in which he may be placed in his profession. In a former number* we recommended to the attention of our readers an excellent work of

* April, p. 230.

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a similar nature, by the Rev. R. M. Inskip, which we take this opportunity of referring to, with the view of impressing on the minds of parents and guardians the great importance of placing these works in the hands of those in whose future welfare they are so deeply concerned. Such books make good officers.

PORTSMOUTH, August 20.—The following "general memo" has been issued by the Queen's command to the captains, officers, and men of the squadron which attended upon her Majesty during her late cruises to Antwerp and elsewhere:—"Victoria and Albert, Cowes, Aug. 17, 1852.—I am commanded by her Majesty the Queen to express to the respective captains, officers, and ships' companies of the vessels comprising the royal squadron under my orders, her Majesty's approbation of the satisfactory manner in which the duties have been performed during the summer cruise. This order to be read to the respective ships' companies at divisions.—A. FITZCLARENCE, Captain and Senior Officer. The captains of H.M. ships *Odin*, *Magicienne*, *Sampson*, *Barracouta*, and *Retribution* are to proceed with their respective vessels to Spithead, and place themselves under the orders of the Commander-in-Chief."

NOTICE TO MARINERS.—The lighthouse lately constructed on Bull's Island, about thirty miles north of Charleston, was lighted on the 1st of August. Bull's Bay affords a safe anchorage ground for vessels of light draught, which may be obliged to seek a harbour by stress of weather.—W. J. GRAYSON, Superintendent. A letter from the Key West correspondent of the *New York Enquirer* states that the light-ship at Sand Key will be removed on the 15th August, after which no light will be exhibited until the completion of the Iron Light-house on Sand Key, now under charge of Lieutenant Meade, of the Topographical Engineers, who is only waiting an appropriation to complete the structure. The Lighthouse on Carysfort Reef has been turned over to the Treasury department. The Panama Railroad Company have erected a light on the extreme north point of Navy Island, which is distinctly visible at a distance of ten miles. Vessels going in give a berth of half a mile, steering S.S.W., which will lead to a good anchorage in five fathoms.

NEW CHARTS, &c.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry.

	s.	d.
SCOTLAND, Inchmarnoch Water, Skipness to Garroch Head, Captain C. G. Robinson, R.N., 1846	1	6
" Frith of Clyde, (Sheets 1 and 2,) Little Cumbray to Whitefarland Point, Captain C. G. Robinson, R.N., 1846, each sheet	1	6
IRELAND, West Coast, Valentia Island, Commander Wolfe and Lieutenant Church, R.N., 1849	1	6
WEST INDIES, Trinidad Island, Bocas de Dragos, with a Plan of Port of Spain, Lieut. Lawrance, R.N., 1849	1	6
EAST INDIES, Irawady River, (Sheets 1 & 2,) Lieut. G. Winsor, R.N., each	2	6
" Bruni River Entrance, Capt. Bethune and Lieut. D. M. Gordon, R.N., 1845 & 49	1	0
AUSTRALIA, South East Coast, (Sheet 1,) Cape Howe to Bariga Point, Capt. J. L. Stokes, R.N., 1851	1	6
" (Sheet 2), Barriga Point to Jervis Bay, Capt. Stokes, R.N., 1851	1	6
" (Sheet 3), Jervis Bay to Broken Bay, Capt Stokes, R.N., 1851	1	6
" (Sheet 4), Broken Bay to Sugar Loaf Point, Capt. Stokes, R.N., 1851	1	6
Catalogue of Charts Published by the Admiralty, complete to August, 1852	1	0

EDWARD DUNSTERVILLE, Master, R.N.

Hydrographic Office, Admiralty, August 22nd, 1852.

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NEW IRON STEAMER.—We understand that Messrs. Burns have contracted with Messrs. Denny and Brothers of Dumbarton, to build an immense iron steamer for the Cunard line of royal mail packets. She is to be upwards of 3,000 tons burthen, and will be more than 50 feet longer than the *Great Britain*. From the model we may judge that her lines will be very fine indeed, which the material of which she is to be built will also facilitate. The engines are to be by Napier, and are to be equal to 1,000 horse-power, although capable of being worked to a much higher force. From the great length and other proportions, it will not be too much to say that this iron ship will far surpass in speed any other vessel on the station, and will show the world what the Clyde can produce. In addition to this transaction, which will involve a cost of £100,000, the Messrs. Burns are about to build two very large screw steamers, to be called the *Jura* and *Ætna*, as consorts to the *Andes* and *Alps*, one of which has just been launched. These are in addition to the *Baalbec* and *Melitta*, now fast progressing towards completion for their Constantinople line.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory. From the 21st of July, to the 20th of August, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter.		Wind. Strength.		Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M	P.M	A.M.	P.M.
		In. Dec.	In. Dec.	o	o	o	o						
21	W.	30·01	30·05	68	76	59	77	SW	NW	2	2	bcp 1)	bc
22	Th.	30·08	30 11	67	77	56	78	W	NW	2	3	bc	bc
23	F.	30·17	30·13	65	76	51	77	N	NE	2	2	b	b
24	S.	30 01	29·99	69	74	57	75	E	E	3	4	bc	bc
25	Su.	29 80	29·76	67	71	60	73	NE	W	2	2	bc	bctlr 3) (4
26	M.	29·72	29·72	64	73	59	75	W	E	2	2	o	bc
27	Tu.	29·93	29·97	67	76	59	77	NE	NE	2	3	bc	bc
28	W.	30·09	30·08	66	75	57	76	N	NE	4	4	bc	bc
29	Th.	30·11	30·09	69	74	59	75	NE	NE	4	4	bc	bc
30	F.	30·12	30·12	65	72	54	73	NE	NE	2	2	bc	bc
31	S.	30·12	30·10	66	75	54	77	SW	SW	2	2	bc	o
1	Su.	30·09	30·07	68	78	58	80	W	NW	2	2	bcm	bcm
2	M.	29·92	29·82	66	77	58	78	N	W	2	2	bcm	bc
3	Tu.	29·72	29·42	67	66	57	70	SW	S	5	6	qo	qor 3)
4	W.	29·40	29·46	61	67	51	69	SW	SW	3	5	bcp 2)	bc
5	Th.	29·51	29·50	63	69	53	70	S	SW	4	4	bc	bc
6	F.	29·47	29·42	61	66	52	68	SW	SW	6	4	qbcp 2)	qbcp 3)
7	S.	29·38	29·37	63	69	55	70	SW	SW	4	6	bcp (2)	qbc
8	Su	29 46	29·50	62	66	53	69	SW	SW	3	3	bcp 2)	bcp (3
9	M.	29·56	29·56	64	65	54	66	SW	SW	3	2	bc	bcp (3)
10	Tu.	29·64	29·70	61	68	50	70	W	W	4	4	bc	bcp (3)
11	W.	29·40	29·21	56	59	54	66	SE	S	6	8	qbcp (2)	qbc
12	Th.	29·31	29·37	56	58	53	59	W	W	7	4	qor (2)	or (3) (4)
13	F.	29·67	29·74	60	68	53	69	NW	NW	3	3	bc	bc
14	S.	29·82	29·80	61	69	52	70	W	W	3	2	bc	bcmt
15	Su.	29 86	29·66	61	66	55	67	W	NW	2	2	or (1) (2	bc
16	M.	29·99	29·99	63	68	50	69	S	S	2	4	bc	o
17	Tu.	29·98	29·88	64	74	62	76	S	S	1	1	o	bctlr (4)
18	W.	29·82	29·86	62	68	59	69	W	W	2	2	bc	o
19	Th.	29·97	29·98	60	68	55	69	N	NW	1	1	od (1	bc
20	F.	30·05	29 99	61	62	57	63	N	N	4	3	o	od 2)

July, 1852.—Mean height of the barometer = 30·039 inches; mean temperature = 67·6 degrees, a remarkably hot month! depth of rain fallen, which was in thunderstorms, = 2·24 in.

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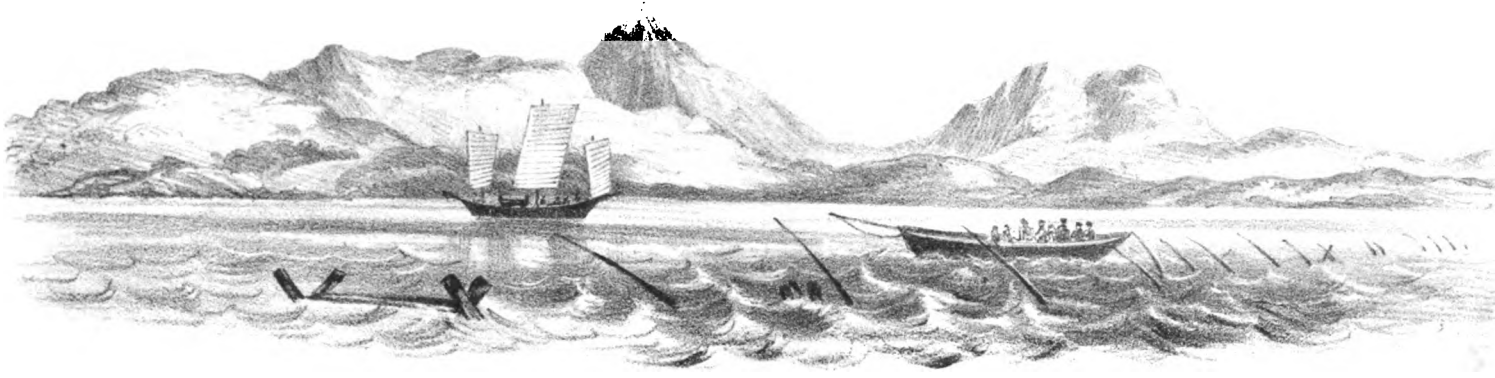
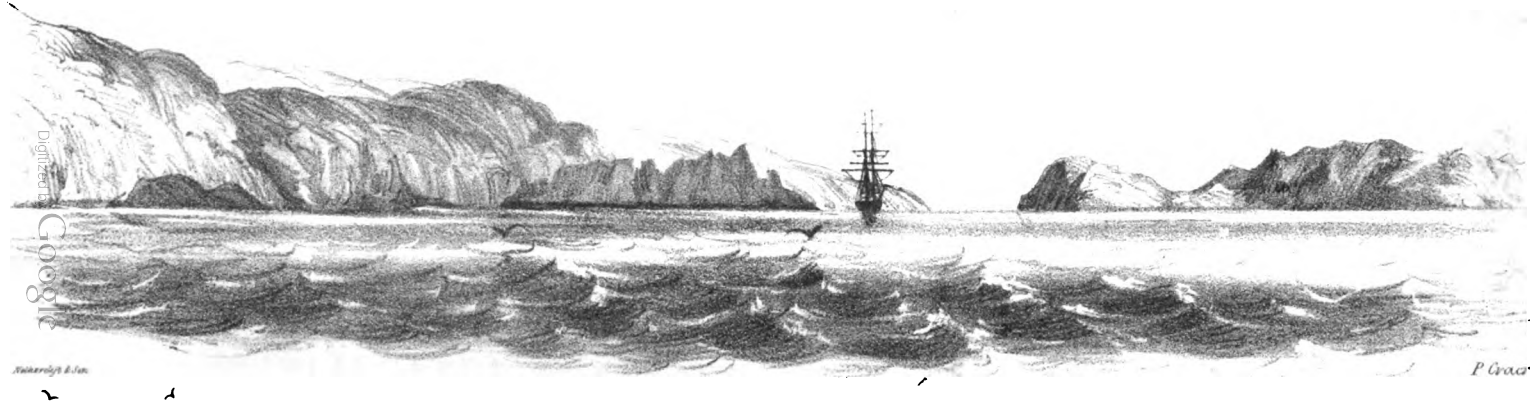


Kiwan Pagoda in Chemo Bay N W b W and fishing stakes P. Gracroft 1850.



P Gracroft 18

Breakwater Rock under the White Dogs S. E. b E. kept in this position leads into the River Min to the Southward of the Knoll at the Entrance.

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THE

NAUTICAL MAGAZINE.

AND

Naval Chronicle.

OCTOBER, 1852.

Ascension and the Southern Ocean.

We will now quit St. Helena, its weeping willow, so pillaged by the curious and, perhaps, thoughtless wayfarer, its tenantless tomb, and the by-gone associations connected with its history; and leave the rock to its future fate.

Our course is now to the northward, to another of those ocean gems which, though rough and apparently profitless as an acquisition in the estimation of the early mariner, has been found of value to the clear-sighted and busy John Bull. There is no representative being, embodying nationality, in this bustling world, more sagacious, without the cunningness of less exalted mortals, than the aforesaid old gentleman; from great conceptions, it is his faculty to descend to, apparently, little things, and from which his cleverness and tact, and, not least among his characteristics, his determinative persistency when in earnest, reap a reward. He has his faults, no doubt, but these are more of the head than the heart; and if he occasionally take a false step, he is generally ready to rectify it: altogether, he is a jolly good old fellow; and though the rest of the world do not love him, they respect and fear him, because his integrity of principle is unimpeachable, and his power commanding.

Ascension was also discovered by Gallego, in the same year that he sighted St. Helena (1501); it has, therefore, stood the revolutions of

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time three centuries and a half. When it first emerged from the depths of the ocean, conjecture has not ventured a surmise; and how much longer it will keep its head above water, is a problem yet to become solved; the gases which uphove it having doubtless found vent in some other direction, have left it quiescent for the long period its existence has been known; but it is possible, if obstructed, they may return and create a revolution. At the era of its discovery, and indeed long after, there was an ardent display of devotedness in external forms, ceremonies, and expressions, pertaining to religious matters; devout words were ever on the lips of the Roman Catholic, to testify to the world, perhaps, now absorbed, even in the midst of the busiest modes of life, he was in heavenly contemplation. Sacred names were given to things and places, often indiscriminately, and with about as much reason as more modern navigators have shown in applying the names of men to islands and headlands. Where is the honour? In the act perhaps with as much force as in the instance of the sandseller calling his donkey "Blucher!" It is greatly to be doubted whether the Prussian warrior, had he been aware of the fact, would have felt flattered at the compliment designed to add lustre to his martial renown; for, as he was an oddity, there is no knowing if he might not have been tickled at the idea of his patronymic having been bestowed on so inoffensive and anti-belligerent a brute. But it is quite certain that on the part of the latter there must have been a perfect unconsciousness of the great honour which his owner, from admiration of the Continental hero, had thrust upon him. The compliment, however, though rather ambiguous in its relation to high respect of person, and of questionable propriety, which is implied in the acts of modern discoverers, seems to be less out of place than that of the old voyagers, which appears to embrace an objection much more strong than that of mere inappropriateness.

Thoughts are often errant in composition, and lead wide of the subject matter under review; but an incidental remark, even when it is irrelevant to the main body of the discourse, invites to the pursual of it; and digression is allowable.

We have just been speaking of the Catholics of three centuries ago, and of their habitual bestowal of holy and saintly names to places; from their doings in the present eventful times, connected not only with names but with something more important, we cannot resist the invitation to add here a few words on that toleration of Mr. Bull which places his liberality among the performances of the simple if not of the insane; he affects to entertain a sovereign contempt for precaution, and if he has reason to be suspicious, he is wonderfully slow in making that apparent! What we allude to is, his passive endurance in this Protestant land of the "Society of Jesus" (a most irreverent misnomer). The fact is the more remarkable, when it is well known that in some of the most strictly Roman Catholic countries its presence is not tolerated. Mr. Bull seems to be overconfident of the immutability of his Church, rebuilt on the rock of the Reformation, he is convinced of

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the impossibility of its being undermined; but human hearts are weak, and human imaginings often take possession of the heart's citadel by assault, and the mind's prior conviction led captive away from the shrine upon which it had placed its hopes and its affections! The proofs are repeatedly recorded.

The politico-religious community of Jesuits, is known throughout the world, and in most states are considered dangerous; but how much more so should they be in one where Protestantism prevails? Like nature the subtle labourers work noiselessly and secretly: the heretic (Protestant) is their game, and there is no obstacle so great as will deter them in their attempts at conversion. In a time of war they become doubly dangerous. It is to be hoped that Mr. Bull will open his drowsy eyes before more mischief ensues; and not only banish this notorious sect, but suppress all monastic institutions, and "Sisters of Charity" societies, which are sadly out of place in such a country as Great Britain.

Now to our theme legitimate; in the hydrographic nomenclature we read such names as these,—Cape Blanco, Cape Espada, Cape Upright, the Saddle-hill, &c.; understanding their meaning, the imagination aids the mind in their recognition when seen; but we can make nothing from those names of men which have been given to headlands. Regret that such is the case is now useless; there is but one remedy, to rename; but that is an innovation not to be thought of.

After the fashion of the times, Gallego called this mass of scoriæ, parched and dried up by internal fires, in honour of the Virgin Mary, "Our Lady of Conception." Did his superstitious imagination aid him in the conception of so strange an honour? It was a serious vagary; whether the famous Albuquerque considered so, or not, we do not know, but he thought proper to change the name, two years afterwards, to Ascension, which it has retained.

There seems never to have been any restraint on this self-willed privilege of naming lands; no rules, no established superior power, that thought it worth while to interfere. The lowest skipper and the highest royal seaman claim and exercise alike the immunity. Have these, and the intermediates, one and the same motive in the bestowal of names?

No! whim and caprice, alas! too often guide
When sober Reason's voice is mute;
For vanity is airy; dogmatic, pride;
Fancy surprisingly acute!
To w ll and to do, 'tis said, belongs of right
Alike to men of ev'ry degree,
Though they be bless'd with intellectual light,
Or, nought beside but darkness see!
In that, ignorance and knowledge are equal:
The savant and the boor take this
Privilege of nature, be they good or evil,
And will 'have their fling,' hit or miss!

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The old navigators often sighted the island, generally on their return voyage. In 1604, Sir Edward Michelburne "descried the island, or rather rock, called Ascension, in 8° 30′ S. The day before, in 7° S., they had a surprising phenomenon: the sea sparkled in a strange manner, and appeared as if all in flames; sending forth such a light in the night (the moon being down) that they could see to read the smallest print." Was this appearance merely the phosphorescence often observed in the ocean, or was it connected with submarine igni-vomous operations? A naval officer informed me that a phenomenon of a similar kind had been seen from his vessel near the equator.

In Captain James Lancaster's voyage, we find this brief mention of the island:—"The thirteenth (July) passed by an island, called The Ascension, in eight degrees. No ships touch there, for it is quite barren, and without water: only it hath good store of fish about it, but a deep sea, and ill riding for ships." This was on the return voyage from the East Indies in the year 1603. It is probable that the pirates of the eighteenth century often visited Ascension to turn turtle, and perhaps also to bury some of their ill-gotten booty.

This solitary spot of the Southern Atlantic, which the old mariners thought of no sort of use, has become more familiar to the reading public than any of the other islands, excepting St. Helena, from its having always been the resort of turtle, and latterly from the establishment which has been formed there for the accommodation of the African squadron employed in the suppression of the Slave Trade, and for other vessels requiring refreshment. It is associated in our ideas with sand, because that product is the medium that the sea-turtle adopts as a nest for her eggs.

Now that the solitary island has been peopled, it is a fortunate circumstance that, unlike the generality of birds, the turtle does not incubate, or wait to attend upon its young when relieved from the ova, or it is probable it would desert the place of deposit altogether. How admirable and perfect are all the provisions of nature! In this instance we perceive that the turtle, as a viviporous animal, from its form and construction would be incapable of incubation; it is consequently endowed with an unerring instinct, which instructs it to deposit its eggs in a hole in the sand, and to cover them up in such a position that the warmth of the sun shall perform the office which, from its own peculiar nature, it is incapable of discharging.

By the same natural tendency, the young, as soon as it escapes from the case of the shell, which the enlargement of its body had burst, digs its way out of the sand, and pursues its course directly to the sea, into which it plunges, and is at once in its proper element and home! The fecundity of the turtle is great; it is useful to man, and that perhaps is the main reason which suggests itself to us why it should be so; but there is another reason: the predatory birds and fishes are ever actively on the watch to capture the weaker animals. The young of the turtle are small, and helpless in defence on the land and in the water, and hence many of them fall a prey to their enemies in both; if they

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were not therefore in superabundance the species would soon be annihilated.

The larger turtle, which are caught during their periodical visits, (we believe generally at night,) are consigned to craals, and are of course lost to their companions of the ocean, and therefore can "tell no tales" about the fate which attends such visits; yet, it is not improbable that the individuals which are so fortunate as to escape from the pilfering hands of man, take warning, if they have been alarmed, and seldom return to the same place; if they do, it is perhaps a case of necessity with them, as there is no other insular spot so convenient for completing the natural purpose which prompts them to seek the land. At present they are no longer the sole masters of the strand; the eternal disturber and supplanter man is there!

I have hinted that all birds do not incubate; as an illustration I here quote from a M.S. entitled "Australian Sketches," an instance or two. That interloper, the cuckoo, affords a well known example in our own country; but there are others which are less familiar to us, and which are more interesting.

We will turn again to the southern clime, and offer some brief remarks on a few of its strange peculiarities. Here the Leiposa, a large bird, well worth domesticating if means could be devised for overcoming its habitual wildness, like the turtle, lays its eggs in the sand, and there leaves them for the sun to hatch.

Here, likewise, the Tallegalla, a species of wild turkey, somewhat after human fashion form a common "lying in hospital." They congregate at certain seasons in the deep and retired forests, where the sun's beams never penetrate. With one accord they then collect the decayed and fallen leaves, with which they erect a pyramid, and therein deposit their eggs. These leaves ferment, the heat and steam thus produced hatch the eggs there layed. It is surprising that these birds should be thus acquainted with the effects of nature's chemistry, or why fling in a heap the decaying leaves? thus enabling them to forego all the pains and trouble of incubation. In Egypt chickens are hatched by the heated oven, but here the Tallegalla procures the same effect by the agency of steam; and the system is fully as efficacious as the Egyptian dry scheme. Physical nature never acts in a single instance without design; and no doubt the novel plan which this bird follows, has a cause which its form would point out; but the sagacity displayed is admirable. The efforts of a single bird would not raise a heap large enough to be capable of hatching the batch of eggs she lays. A combination is therefore formed, and the work is perfected with ease: but by what sort of sign the birds are led so to act in company, no human eye has hitherto seen. There is one point not yet determined; that is, the care of the young before they can fly; whether the chicks are tended by the parent, or whether there is a general nursery. This affords us another instance of the care of Providence over all his works, and of the inscrutible way in which he works his will. Ornithologists do not agree about the family to which this bird should belong; one assigning it to the Vulturidæ, while ano-

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ther places it among the Gallinaciæ. It no doubt belongs to the useful Gallinaciæ, having most of the characteristics of that class, although it has the foot of the Vulturidæ.

Ascension is decidedly volcanic, yet there is the curious feature in the middle of the mass of scoriæ, &c., of a limestone mountain of 2,400 feet elevation, which appears free from the action of fire. How came it there in such an anomalous position? By a force no doubt acting upwards beneath its original position. From its assuming a little verdure, it is called the "Green Mountain," and from absorbing moisture is highly prized; in fact, it appears to be the most valuable portion of the island; and the industry of the "jollies" has turned it to good account for the benefit of the torrid-tanned blue-jackets. In the spirit of improvement, I think it would well repay the cost to import, from the nearest point of Africa, ship loads of soil.

On the subject of sterile isles, I find notes on Sable Isle, but that has been recently well handled. I may just hint, however, with respect to that accumulation of arenaceous matter, that a steam-engine, stone and mortar, and piles, with a Nasmyth's hammer to drive these down, directed by a clever engineer, would soon drain it of its superfluous water, and by the introduction of thousands of tons of soil from Newfoundland or Nova Scotia, convert its surface into a profitable garden. Tanks for fresh water, piers, break-waters, houses, &c., &c., would then follow as a matter of course.

We now quit Mr. Bull's turtle isle, and steer in quest of more points, if any remain to be overhauled, first having a yarn about the Southern Ocean, as intimated in the title to this paper. The periodical phenomenon of the "Rollers," has been explained and described by Mr. Webster and others in the *Nautical.*

The English brig *Crusader*, arrived at Cowes from St. Jago de Cuba, and landed the captain and crew of the *Pauline*, Le Chevalier, master. It appears that on the 17th of last month, whilst on their passage from Porto Rico, in long. 40° 10′ W. of Paris, and lat. 40° 30′ N., with a cargo of sugar, bound to Havre, at about 11 A.M., whilst under easy sail, the vessel, a new ship of 400 tons, was struck by a monstrous whale on the bow, and the damage was so great that the ship filled almost immediately. The captain and crew, consisting of ten men and a passenger, hoisted out a boat, in which, after stowing away a bag of biscuits and a little water, they embarked, and about fifteen minutes after the vessel was struck, she sunk. For three days and nights she was tossing about, but on the fourth day they were providentially seen by the *Crusader*, and rescued from their perilous situation. None of these rescued have preserved anything, and as they are destitute of necessaries, the French consul, W. Stuart Day, Esq., has shown his usual kindness and promptitude in providing for their necessities.

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Notes on a Voyage to China in Her Majesty's late Screw Steamer Reynard.—*P. Cracroft, Commander.*

(Continued from p. 481.)

The river Min is not navigable for any thing but the shallowest river craft, above the bridge, although in appearance still a magnificent stream. Immense rafts of wood, from the pine forests in the interior, are floated down, and form the staple trade of the place; and "spars" are exported to all parts of China. We completed the ship with this fuel, made up in bundles, as much as she could stow, piling the wood up abaft the mizen-mast also. The price was two mace (about 8d.) a picul of 133 lbs., or about 2½ dollars a ton; and as a ton of wood was found to do as much work as half a ton of the very best coal, I calculate the expense of this fuel as equivalent to burning coal at a little more than a guinea a ton. Through a compradore, known by the name of "Long-legs," and who supplies the opium ships at the Woga Creek, I obtained beef and vegetables at Amoy prices. Supplies of all kinds are very plentiful; pheasants, roe venison, and wild fowl of every description, are to be had; and the officers found plenty of employment for their guns upon the hills in the neighbourhood; the inhabitants everywhere appearing most friendly disposed.

On the evening of the 1st of February, all my preparations being complete, embarked Mr. Jackson, the Consul; and at daylight on the 2nd started to fulfil the confidential mission with which I am entrusted at Wan-chow-foo. It was the top of high water when we started, so we carried the ebb the whole way down the river. Found quite a rapid over the ledge at the commencement of the Mingan Pass, and shot through the Kinpai Pass with a velocity which was anything but pleasant; and I inwardly hoped I might never have to take the ship above it again. On reaching the bar, it was dead low water, and although our chart gives not less than two and a half fathoms, in the shoalest part of the channel, we scraped along in a quarter *less* two to a considerable distance outside Rees Rock, altering course in every direction to find deeper water, without success; and these are "neap tides." It is evident the channel is filling up. I may mention, also, that there were breakers on the knoll, (which is supposed to have never less than nine feet on it,) while the water was perfectly smooth everywhere else.

The weather continued fine until shortly after sunset, when it began to threaten, the barometer *rising* fast; so a snug anchorage being at hand, I came to under Double Peak Island in six fathoms. During the night the monsoon came down very strong, as I anticipated; and to think of moving at daylight was quite out of the question; so here I remained, thankful to have a quiet Sunday. It blew very hard on Monday and Tuesday in squalls, but the ship rode very quietly with the yards pointed to the wind: the holding ground is excellent, being a stiff blue clay, which we had some difficulty in getting off the cable. This island, together with one called Spider Island inshore of us, has

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obtained some notoriety as a pirate haunt; and the Chinaman I have on board as a spy or informer, was once taken prisoner and detained here several weeks. I fear our appearance on the coast has been the signal for these freebooters to decamp, for even his lynx-eyes failed to discover anything suspicious in the neighbourhood.

Away at daylight on Wednesday the 6th, with a fine working breeze; weathered the Pihseang Group, but was forced to anchor in the open channel to the northward of these islands at nightfall; for with the strong current running, it would have been most hazardous to have kept under way in the dark. Thursday brought thick foggy weather; and I thought myself lucky to get up under the lee of High Peak, or Fuh-yan-shan Island before dark. Away again at daylight, and after a hard day's beat, weathered the Tae Island Group, on one of which is a most remarkable mushroom-shaped rock. There was no anchorage within reach at sunset, so stood out for the night; fetched well to windward of the Seven Stars in the morning, and had hopes of getting into an inlet of Namki Island before dark, but failed; so had another night of it, and a more disagreeable one if possible. In tacking at midnight the foot rope of the foresail gave way, and the sail split up to the reef band; (last night it was the maintopsail;) it was nearly 2 A.M. before the other foresail was set; and what between the wind and the heavy sea, with a dismal sky of the most ferocious-looking clouds, I thought we were in for a dusting. As we drew in shore again, however, these portentous appearances vanished, the breeze took off, and, after church, there was so little wind, that I got the steam up, and at 1 30 P.M. we were screwing along in a dead calm. Anchored for the night off the Hoo-tow-shan (Tiger-head Hill) Group, at the entrance of the Wanchow River, in lat. 28°, where there is excellent shelter and good holding ground.

Monday Feb. 11.—At daylight proceeded up the river under steam, and with the help of a tracing of Capt. Bate's survey, which he was good enough to give me before we left Hong-Kong, found no difficulty; although it is evident that the shoal south of the entrance of the river has extended considerably since the survey was made. Off the walled city (name unknown) on the left bank we found, at anchor, the British schooner *Dido*, belonging to Mr. Davidson of Ningpo, with a convoy of junks bound coastwise. On a bold headland, a little higher up, on the opposite side of the river, stands a fort, having one of those curious jar-shaped towers conspicuously placed for the purpose of making signals at night: we gave this the name of Jar Fort. The tide here was running rapidly; but nothing to compare with that of the Min. About three miles higher up, finding the ebb coming down strong, anchored at noon, close to the left bank, at the entrance of a creek navigable for river craft, and moored with 25 fathoms each way, in 6 fathoms, stiff mud.

Bearings of the anchorage.. { First Pagoda on the left bank N.W.b.W.
Extreme point of Flat Island N.¼W.
West point of Flat Island E.b.S.¼S.

The city of Wanchow is about five miles from this point, but is shut

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out from view by a remarkable barren-looking hill, projecting into the river, which here makes a sharp bend. In the afternoon I landed on the right bank, abreast the ship, in company with Mr. Jackson. A straggling village extends almost the whole distance from Jar Fort to this point; the country for miles appears to be a flat plain, intersected by numerous canals, and is highly cultivated. We found the inhabitants very much disposed to be friendly; but it was with great difficulty we could communicate, Mr. Jackson's mandarin Chinese not being understood by these illiterate people.

This is the Chinese New Year's Eve, and a season of festivity answering to our Christmas, when all work is laid aside, and amusement is the order of the day. A crowd was therefore soon collected; and, after what I had heard of the disposition of the Canton people, at this season especially, I was fully prepared to be insulted, perhaps pelted and robbed. In anticipation of some such proceeding, I had put a four-barrelled revolver in my pocket; but might have left it on board, for not the least incivility, even, was shown us, far less insult. Indeed we were invited into a great many houses, to partake of what these poor people had to offer, and drank sundry cups of tea, hot wine, samshoo, &c., and tasted the cakes made of rice flour, coloured red and yellow, with hieroglyphics on the outside; precious nastiness! In this way a good opportunity was afforded us of examining the condition of the inhabitants, who, judging from the small show of worldly wealth their filthy dwellings contain, and the very general air of poverty, must be in a miserable state.

The next morning started in my galley with Mr. Jackson for the city. A thick haze overhung the turbid muddy stream, which the rays of the sun gradually dispelled, disclosing the magnificent scenery. Bold precipitous hills, scarped perpendicular in some places, form the boundaries of the extensive basin in which Wan-chow-foo is situated. Four pagodas, two of them on an island abreast the city wall, give a picturesque effect to the foreground. Off the first pagoda there was plenty of water for the *Reynard;* but I thought it hardly worth while to shift to so short a distance. Within a cable's length of the city wall, I found a deep channel, where a few vessels, drawing twelve feet, might always lay afloat, moored head and stern; here I found the English schooner *Spec*, and a small schooner called the *Alfa*, under Dutch colours, both employed convoying junks. One Amoy junk, and about twenty of a very inferior class, apparently mere river craft, were scattered in this reach; and if an opinion may be hazarded from the fact of there being so few vessels here, the trade of Wanchow carried on by sea cannot be very important.

My first object on landing was to arrange about a supply of wood to replace what was expended in steaming up here; but nothing could induce the Chinese, on this the first day of their year, to engage in any business. Every shop was closed; not even an egg or an orange could be procured. The few people moving about the streets, were dressed in their gayest attire; and as this saturnalia is supposed, according to the *lex non scripta*, to last three days, I thought myself for-

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tunate, after much haggling between my Chinese servant (Tom Jaw) and a "respectable city merchant," to obtain a promise that the next day the wood should be forthcoming. This settled, the next point was to Chin-chin the mandarin's, having previously sent my card, according to custom. But, on repairing to the official residence of the Tou-tai, or chief magistrate of the city and district, that officer was absent; and the next in authority, an admiral, pleaded illness as an excuse for not receiving us. It was evident neither of them intended to have any communication with me or my ship, and Mr. Jackson explained the reason, (which indeed was pretty obvious,) that, as by the treaty of Nankin, no English ship has any business to come here, so, the mandarins having no power to exclude us, their only alternative is to take no cognizance of our presence, and thus obviate the necessity of making a report of our arrival to the government, which (Mr. Jackson added) would certainly only lead to their disgrace for not keeping us out of their waters.

Nothing now remained but to make the best use of the time to inspect the place. Accordingly, the remainder of the day, and the whole of the next, were occupied in wandering over the city, no one offering the least hindrance; indeed the people every where shewed us the greatest civility; and beyond a little crowding occasionally to have a good stare at the "Fauqui," which was not at all to be wondered at, we had no reason to complain of our reception. It was evidently a high festival; "sing-songs" and theatricals were going on in many of the streets, attracting, as the day advanced, crowds of people, who had evidently well fortified the inner man. I noticed several cases of intoxication, though none of disorderly conduct. From a little chart-maker, who was evidently an opium-smoaker, by the glare of his eyes and unnatural state of excitement he seemed in, I obtained the following "Description of the Interior of Tung-gou Walled City."

"There are nine hills inside, named the Kew Tow. At the east gate there is the Hwa-kae hill, with its Ta-kwan Ting and Seaou-kwan Ting (watch-towers or observatories, having greater or less extent of view). At the west gate there is a large palace and temple, within the grounds of which is the Gou-shan (hill). Proceeding to the San-tsuh-mun, (Tripod gate,) there are three hills, and the nine-curved river passage. At the south gate there are two hills, and the two old rivers. On the outside of the east gate there is the Yang-foo-shan water passage,* which is here three chang (30 covids) wide or more; but on arriving at Seaou-ke-too its breadth is little more than 20 covids†. There is high tide at midnight and noon; floating sands and mud bottom. Again on arriving at the east gate mound" * * But here we cut the little man's pencil lucubrations short, as our time began to fail. The above will, however, serve to give an idea of what is considered valuable information by a Chinaman; and, probably, had the sketch been concluded, we should have been as wise as ever in all

* The river the *Reynard* had steamed up.

† The covid, or Chinese foot, equal to 13·125 English inches.

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that it is of importance to know with regard to the statistics of the place.

The city of Wanchow, or Tungow-ching, is built on the south or right bank of the river called by the authority (?) above-mentioned the Yang-foo-shan; (in our charts the Gnau;) it is enclosed by a well-built wall, the circumference of which may be from four and a half to five miles. The population, including that of the suburbs, we estimated at about 200,000. The streets are intersected by canals; and it was evident, from the water marks on the walls of the houses, pillars, &c., that they are frequently inundated. We noticed many large pools of standing water, and remains of the last inundation; and I have little doubt that the whole of the city must be at times more or less under water, when the communications can only be carried on by boats; (if one may judge from the number to be seen, at this dry season apparently useless;) and the high spring of the arches of all the bridges are crossed. I noticed also many open places, covered with ruined houses, an indication of a reduction in the number of inhabitants, and decay in the place. Whether owing to its unhealthiness or not, it was impossible to ascertain; but no European constitution could long withstand the exhalations which must result from these floods, combined with the heat of the sun, which, even at this time of year, is most oppressive, and forced us to carry our umbrellas. The few elevated grounds within the walls appeared to belong to adjoining temples, and to be used for burial places; but every where coffins were to be seen exposed to the air, with bamboo mats over them, in accordance with the custom peculiar to the province of Chehkiang. I observed one firmly fixed in the fork that had been formed by two branches of a lichee tree; it had probably been there for some years, for the tree had grown into it.

Towards the afternoon of the 13th the shops began to open, and we were enabled to obtain some information on the subject of trade. From all we could gather it would seem to be almost entirely a coasting one; the imports are piece-goods, raw silk, wood, and dried fruits, brought principally from Amoy, Foo-chou-foo, Taichou, and Ningpo: the exports are vegetable tallow, rice, and small spars. Raw silk, cotton, cotton yarn, and piece-goods, and woollens, (English,) are also brought by canal from Ningpo, Shanghae, Shou-hing, Soo-chou, and the silk districts. There are manufactories of silks in the city, and they will weave to any English pattern, or *muster*,* as it is called, at Canton. Cotton cloths are manufactured in the neighbouring villages. The tea hills are distant three days journey, but an inferior kind of green tea is grown in the immediate vicinity. We went to see a manufactory of shamsoo and soy, of which the Chinese consume great quantities. The bean from which the latter is extracted is put into enormous open jars of coarse earthernware, filled with salt and water. Fermentation takes place, and the liquor is drawn off at the proper period, and undergoes various purifying processes to prepare it for the

* This word must be borrowed from the German.

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market. Both here and wherever we went we were received with the utmost civility, our questions were answered with apparent candour and good faith, and, from all we saw and heard, I should conclude that the people generally would have no objection to become better acquainted and open a trade with Europeans, although their means, from the general air of poverty, cannot but be limited. There can be no doubt, however, that as a depôt for goods awaiting transit into the interior, Wanchou would, from its central position and canal communication, become a place of great commercial importance, and, but for the treaty of Nankin by which we are unfortunately excluded from this port and adjoining district, British merchants might be doing a lucrative business here.

I did not attempt to get any fresh beef and vegetables for the ship's company; indeed, for the reason already mentioned, there was a difficulty in procuring supplies of any description. The river, however, was alive with wildfowl, and the officers were very successful with their guns, and experienced, wherever they wandered, as much civility as above stated I met with myself.

The wood-merchant did not disappoint me, and, having filled up with fuel, at nearly the same price as that I purchased at Fou-chou-foo, on Thursday the 14th of February, we left our anchorage, at noon, under steam, and, with the assistance of a strong ebb-tide, had cleared all the dangers at the entrance of the river, by 3h. 30m. P.M., taking the channel to the northward of the shoal, between the two islands, Hoo-tou-shan and Laouka-shan; the soundings in this passage did not agree very well with those laid down on our chart, but Captain Bate's survey of the river did not, I believe, extend so far as this. At 4 o'clock lifted the propeller, and proceeded under sail only, banking the fires up. The next day, at noon, we were abreast of the Seadog Islet, having, in a little more than eighteen hours, run the distance, which it occupied ten days to accomplish in the opposite direction! Got the steam up; crossed the bar of the Min without any difficulty, using the leading marks of which the captains of the opium ships here gave us descriptions; and, as it was too late to proceed farther, moored ship, in four fathoms, in the Woga Creek.

February, 16th.—At 7h. A.M., about two hours before low water, Mr. Jackson left the ship for Foo-chou-foo in my galley, and the boat returned a little after 9h. P.M. I mention this circumstance as the time occupied in going to and returning from the city was considered very short. In the afternoon I took my gun, and, accompanied by some of the officers, rambled over the hills in the vicinity of our anchorage, in quest of game. Pheasants are sometimes to be met with, but dogs are necessary, as the birds lie very close; not having any, we returned empty-handed, the exercise, however, and magnificent country traversed in our walk, made ample amends for the want of sport.

Monday, February, 18th.—At 1h. P.M., a little before high water, left the Woga Creek, under steam, crossed the bar of the river, put the fires out, and shaped a course, under sail, for Amoy, where we

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arrived the next afternoon, and anchored off the Cornwallis rock in six fathoms, moored with an open hawse to N.E., Cornwallis rock and centre bastion of the 100 gun battery on the beach, in one, bearing N.N.E. three cables.

Remarks on the approach to the river Min, with directions for entering it.*

24th.—Our present anchorage has many advantages over the first which I had here, above Kulansu, as well as over the inner harbour, to which I shifted the ship after the fire in December: the holding ground is good, we are beyond the reach of the exhalations from the mud at low water, enjoy a free circulation of air, have a fine sandy beach within a quarter of a mile, and a few yards inside the battery (which is only a dummy all the guns having long since been removed) there is an open level ground for exercising the small arm men, or for the relaxation of a game at cricket, when the duties of the ship will permit. The consulate is a little further off certainly, but we can communicate by means of a signal post on the hills overlooking both city and harbour, and commanding an extensive view to seaward. Then we are no longer in danger of being fouled by the crowds of junks which were perpetually passing us in the narrow channel left for the passage of shipping off the hongs, for very few of them anchor so far off the town as this. About a mile from the ship, at the foot of the range of bleak granite hills, the sharp, well defined outlines and projecting boulders of which, blackened by the action of the air, have a very peculiar appearance, there is a handsome Bhuddist temple, standing in a picturesque spot, and well worth a visit. The priests always appear glad to see us and make us welcome to their tea and rice cakes. The road from hence to the city of Amoy, which is distant about two miles, leads through a suburb of the meanest description. It is impossible to give an adequate idea of the squalor and filth visible at every step in these wretched hovels; pigs dispute with troops of ragged dirty children the possession of the mud floors, and appear to occupy the same social position here, that they do in unhappy Ireland. The sight of our European dress is the signal for every dog to set up a howl, and the women all hobble away as fast as their feet will allow. It is evident the proceedings of our forces at the capture of this place, although it is now more than eight years ago, are not yet forgotten.

From this suburb a broad paved road leads to the consulate, past the signal-post, before mentioned, whereon the union-jack waves proudly as though Amoy were ours still. It winds through an immense burial ground; tombs and graves, jars of bones, and the mouldering remains of humanity, are visible in every direction. The sight is loathsome at first, but one soon gets used to it. Groups in kneeling attitudes are sometimes seen making sacrificial offerings at the tombs of their ancestors, and the hills are everywhere strewed with little square bits

* These remarks were published in the *Nautical Magazine* for the month of September, 1852, p. 478.

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of paper, on which are pasted patches of gold and silver leaf, representing the money that has been paid the priests nominally for the subsistence of the departed in the world of spirits. Can anything be conceived more pitiable than the condition of these poor heathen? The doctrine of a resurrection from the dead, of an eternal state of future happiness or misery is far beyond their comprehension! I am told the inhabitants of this part of China are fearfully superstitious and priest-ridden, and readily believe it; mobs of filthy stinking wretches carrying idols, and religious paraphernalia, are continually traversing the streets of Amoy in procession; at night, illuminations and fireworks in honour of some joss are perpetually going on: in these, and the sacrifices to the dead, much of the substance of the people, which might be devoted to useful purposes, is swallowed up.

I do not pretend in this journal to enter into a description of the manners and customs of the Chinese which have been over and over again enlarged upon, by more competent persons. Those, however, who believed that the Pottinger treaty would be the means of making us better acquainted with this curious nation must have been much disappointed; indeed, it may be doubted whether, with all our advantages, our knowledge of the interior of China has much increased since the days of the Jesuits. This is not to be wondered at when we reflect that beyond the dealings between our merchants and an infinitely small proportion of its immense population, there is a great gulf fixed. We are not permitted to penetrate into the interior, nor is it any satisfaction to remember that the line was drawn by ourselves; that, by the treaty of Nankin, we deliberately shut ourselves out from the advantages of personal intercourse with 360 millions of people; an intercourse that must have eventually awakened, between two races of human beings, sympathies which have at present no existence. It is difficult to overcome prejudice, all men must have their likings and dislikings, but I cannot

> "——— by proof find there should be,
> Twixt man and man such an antipathy,
> That though he can show no just reason why
> For any former wrong or injury,
> Can challenge or accuse him of no evil
> Yet notwithstanding hates him as a devil."

On the contrary I feel kindly disposed towards the Chinese. I have already experienced kindness from them which the decrees of their effete government against "barbarians" could not prevent them from showing, and most sincerely hope the time is not very far distant when our iron steamers may enjoy the privilege of navigating their canals and inland waters, diffusing every where in their course, a knowledge of our civilization and christianity. But, in the present state of affairs, this is impossible, our government is pledged not to permit any of its subjects to wander beyond a certain distance from the five ports to which, by treaty, our trade is confined, and our consuls are authorized to punish any infringement of this regulation.

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February, 27th.—H.M.B. *Mariner* arrived this evening, with the mail of December 24th, and my orders to proceed again to the Min, to embark Mr. Jackson, H.M. consul, and family and take them to Hong-Kong. Mr. Fortune, the botanist, came up in the *Mariner*, and I was glad to be enabled to forward his wishes, by giving him a passage to Foo-chou-foo. This gentleman is proceeding to the Bohea hills to procure tea-plants for the East India Company's garden in the Himalayas. He has already explored an immense district in China, hitherto unknown to Europeans; and all at home who take an imterest in the study of botany, or have gardens or grounds to embellish, have reason to be deeply indebted to him for the introduction of many new plants and trees into England.

ARCTIC EXPEDITIONS.*

[The following on Arctic affairs is from one of the leading articles of the *Times*, 26th August last.]

"What news of Sir John Franklin? Have any traces of his whereabouts being discovered? Has any light been thrown upon the fortunes of himself and his crews?" Such are the inquiries which the announcement of any new narrative of an Arctic Expedition will elicit from almost every Englishman, and until these questions are answered it would be a mere waste of time to expatiate on geographical or geological discoveries, or to unfold additions to the *Flora* and *Fauna Borealis*. Dr. Sutherland, who appears to have literally followed Sir John Franklin's recommendation to his officers to "observe everything from a flea to a whale," has accumulated in the volumes before us many useful facts in natural history and meteorology, to which, however, due attention will scarcely be paid until anxiety about Sir John Franklin's fate is somewhat allayed. We hasten, then, to say, on the authority of those best qualified to form an opinion upon the subject, that hope of Sir John Franklin's safety is by no means to be abandoned, for the probabilities of his existence in some Polar region not yet explored are far greater and more numerous than the probability of his total loss. We say total loss—because in any other case than that of foundering in deep waters some vestige of wreck would, ere this, have been detected by the many keen-sighted and ex-

* 1. "Journal of a voyage in Baffin's Bay and Barrow's Straits in 1850-51, performed by H.M S. *Lady Franklin* and *Sophia*, under the command of Mr. William Penny, in search of the missing crews of H.M.S. *Erebus* and *Terror*." By Peter C. Sutherland, M.D., M.R.C.S.E., surgeon to the expedition. 2 vols. Longman's. 1852.

2. "Papers and Despatches relating to the Arctic Searching Expeditions of 1850-51-52; together with a few brief remarks on the probable course pursued by Sir John Franklin. Collected and arranged by James Mangles, Commander, R.N. Rivington's. 1852.

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perienced investigators engaged in the search. We will remind the impatient or ill-informed that the total extinction of two British men-of-war, commanded by such officers as Sir John Franklin and Captain Fitzjames, and manned and equipped as the vessels of his expedition were, is an event so contradictory to all experience of the casualties of the Polar regions, as to amount to the strongest improbability. Captain George Harrison (of 30 years' experience in the command of whalers) states, in a letter printed in the *Nautical Magazine*, for April, that out of the whole 103 ships wrecked since the first discovery of a passage through Melville Bay, not more than 10 lives have been lost. And to those who fancy that every nook of the Polar regions has been explored for the missing voyagers, we would observe, that the whole of the regions hitherto explored by the various expeditions sent out, are scarcely one-third of those which remain unexplored. It may be well to add, moreover, that in the opinion of most competent judges, such as Colonel Sabine, Mr. Augustus Peterman, and others, there is a greater probability of finding Sir John Franklin's expedition in regions to which search has not yet been extended than in the more familiar localities throughout which search has hitherto been made. The arguments of those who maintain the improbability of maintaining life in higher latitudes than those already explored are refuted by well-established facts, to which we will presently advert more in detail.

Sir John Franklin sailed from Sheerness with the Erebus and Terror, in May, 1845, and arrived at the Whalefish Islands on the 4th of July. His last despatches were from this point, bearing date July 12, and in Captain Mangles's excellent little repertory of Arctic papers some really charming letters from Captain Fitzjames of the same date may be found, and will be perused with pleasure by all who love a sailor's lively humour and unruffled cheerfulness, blended with the delicate feelings and correct taste of the wellbred gentleman. The *Erebus* was spoken on the 22nd of the same month by Captain Martin, of the whaler *Enterprise*, in latitude 75° 10′, longitude 66° W. The latest date at which the expedition was actually seen, was four days subsequently. The *Prince of Wales* whaler reported that on the 26th July, 1845, she saw Franklin's vessels in lat. 74° 48′, long. 66° 13′. They were then moored to an iceberg awaiting an opening in the middle ice to enable them to cross over to Lancaster Sound. Between this period and the 23rd of August, 1850, five years and a month, when the first traces were discovered by Captain Ommanney, of H.M.S. *Assistance*, at Cape Riley, no intelligence, direct or indirect, was received of the missing ships. The evidence afforded by these first traces were added to largely four days afterwards (27th of August, 1850,) by Captain Penny's alighting at Beechy Island upon the spot where Franklin spent his winter of 1845-6.

Early in 1850 the Admiralty, after despatching an expedition under Captains Collinson and M'Clure, to Behring's Straits, placed four ships in commission under Captain Horatio T. Austin; C.B., who had served in an exploring voyage under Sir Edward Parry, for the purpose of examining Barrow's Straits, under a notion that Sir John Franklin

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might be retracing his course eastward in boats, or even in the ships themselves, having relinquished the hope of making a north-west passage. The squadron under Captain Austin consisted of his own ship the *Resolute*, the *Assistance*, Captain E. Ommanney, and the steam tenders *Pioneer*, Lieutenant Osborn commanding, and *Intrepid*, Lieutenant Cator commanding. It was considered desirable that to the power of the navy should be added the experience of the whaler, and accordingly, the Lords of the Admiralty ventured to associate William Penny, an experienced whaling captain of Dundee, with their own commissioned officers. Mr. Penny, after receiving instructions from the Admiralty, proceeded to Aberdeen and Dundee, where he purchased two new clipper-built vessels, which were named respectively the *Lady Franklin* and *Sophia*, the latter in compliment to Miss Sophia Cracroft, a niece of Sir J. Franklin, and most devoted companion of his noble-hearted wife. These vessels were placed under Mr. Penny's command, with separate instructions direct from the Admiralty, and both ships and men acquitted themselves during their perilous enterprise in a manner not calculated to justify any contempt on the part of their naval associates. Mr. Penny had been engaged in the Arctic Seas since his 12th year, and in command of a whaling ship for 16 years. Dr. Sutherland informs his readers that Mr. Penny's reputation for skill and sagacity was high among his brother whalers, and on any occasion of difficulty, "What does Penny think of it?" was a question of common occurrence. Sir Francis Beaufort, the Hydrographer of the Admiralty, is referred to by Dr. Sutherland as able to bear testimony to the fact that Mr. Penny, previous to his appointment to the Arctic Expedition, had done something to extend our geographical knowledge of the regions he had occasion to traverse in pursuit of his vocation. At no small risk, and at considerable expense, Mr. Penny took the first step to establish the interests of Great Britain on the west coast of Davis Straits, the importance of which we shall have an opportunity of indicating when we come to speak of the Danish settlements and their civilising consequences on the east coast of Davis Straits. "Captain Penny," observes Dr. Sutherland, with reference to these well intended and judicious efforts at colonisation,—

"Failed in this and all his subsequent attempts to enlist the enterprising and the wealthy in his sound but not well arranged ideas of establishing settlements on that coast, for the very reason that a predominating feature in his character came between him and the end he had in view. His detailed descriptions are *sui generis*. A complicated network of valuable facts, fearlessly expressed opinions, most sanguine expectations, faithful inductions, and mere hypothesis, is what one may look for at his hands. Without rhetoric and unsophisticated, his arguments fell to the ground before men whose lives had ever been closely associated with figures. No one need wonder that the sailor who had been buffetting the waves and the whales for 30 years, and had never calculated anything more intricate than a lunar distance, should fail to persuade a number of money-making merchants into forming a company."

We have dwelt at this length upon Mr. Penny's character because rumours have been widely prevalent to the effect that a misunderstanding between the whaling skipper and Captain Austin thwarted

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the operations and marred the efficiency of the expedition. A perusal of Dr. Sutherland's volumes will show that this was by no means the case; but we have thought it of importance so far to advert to it as to remove from the public mind an impression that the efficiency of an expedition in which the hearts of so many thousands were embarked, had been diminished by the splenetic humours of those engaged in its conduct.

The *Lady Franklin* and *Sophia*, under the command of Captain Penny, left Aberdeen on the 13th of April, 1850; but did not fall in with Captain Austin's squadron until the 28th of June, off Berry Island, on the west coast of Greenland. Without following the ships step by step through their laborious progress across Baffins Bay, down Lancaster Sound, and Barrows Strait, we will pause at Beechey Island, which lies at the south-eastern extremity of Wellington Channel, just at its entrance into Barrows Straits. Here Mr. Penny had discovered unquestionable traces of Sir John Franklin on the 27th of August,* and here the ships were moored to examine it as carefully as possible. The landing party was composed of all the officers of the expedition, except the chief mates, and was under the orders of Mr. Stuart, commander of the *Sophia*, to whose intelligence, perseverance, and zeal, Captains Austin and Penny, and Dr. Sutherland, combine in bearing testimony.

"Traces," observes the latter,

"Were found to a great extent of the missing ships: tin canisters in hundreds, pieces of cloth, rope, wood in large fragments and in chips; iron in numerous fragments, where the anvil had stood, and the block which supported it; paper, both written and printed, with the dates 1844 and 1845: sledge marks in abundance; depressions in the gravel resembling wells which they had been digging; and the graves of three men who had died on board the missing ships in January and April, 1846. One of the shore party was despatched with this intelligence to Mr. Penny, who immediately came on shore, accompanied by Sir John Ross, Commander Phillips, of the *Felix*, Sir John's vessel; Commander De Haven, and Lieutenant Griffiths, of the American expedition, which had joined our ships in Barrows Straits, and other officers. These were unequivocal proofs that the missing ships had spent their first winter in the immediate vicinity of Beechey Island. A finger-post was picked up, which we at once supposed had been made use of to direct parties to the ships during winter, if they should happen to have lost their way in a snowstorm. Captain Parry adopted the same precautions around his winter quarters at Melville Island; and it is not improbable some of the posts may be found after a lapse of 30 years. Our ideas were that the ships had wintered in a deep bay between Beechey Island and Cape Riley, which we called Erebus and Terror Bay. Immediately adjacent to the supposed position of the ships, we found the site of a large storehouse and workshop, and smaller sites which were supposed to have been observatories and other temporary erections. Meat tins to the amount of six or seven hundred, and a great number of coal bags, one of which was marked 'T-e-r-r-o-r,' were found. *But there were no papers found anywhere that had been left by the missing ships.*"

Here, then, was unquestionably a station of Sir John Franklin's

* Previously found by Captain Ommanney on the 23rd August. See *Nautical Magazine* for 1850.

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party, and occupied until the 3rd of April, 1846, at least. In the opinion of Captain Penny and others it was occupied for a lookout up the Wellington Channel, to watch the first opening of that icy barrier which so frequently seems to block it up. Sir John Franklin's instructions, in 1845, were to proceed to the Wellington Channel, and, if possible, through it, and the marks of a hasty departure thence may be more reasonably accounted for by a sudden opening in the ice, of which the ardent spirit of Franklin would prompt him instantly to avail himself, than the wild supposition which has been broached of his retreat from an onslaught of savages, a feat quite inconsistent with the habits and disposition of the harmless and inoffensive Esquimaux. The determination to follow out the Admiralty instructions by pushing onwards was powerfully developed in all Sir John Franklin's party. Captain Fitzjames, then Commander Fitzjames, says in a letter to a friend, written from the Whalefish Islands, in July, 1845:

"Don't care is the order of the day; I mean, don't care for difficulties or stoppages; go ahead is the wish. We hear this is a remarkably clear season, but clear, or not, we must 'go ahead,' as the Yankees have it; and if we don't get through, it won't be our fault."

Beechey Island was examined again and again, and a party dug round a cairn erected on a bluff point with picks and shovels in search of cylinders with papers, but none were found. Had Sir John Franklin left any documents they must have been discovered, for all documents deposited by other parties in the ordinary manner of Arctic explorers were always found uninjured.

Accordingly, after many boat excursions to the adjacent channels and islands, the ships were laid up in winter quarters. Captain Penny's ships and Sir John Ross's little vessel the *Felix*, in Assistance Harbour, at the south-western extremity of the Wellington Channel, and Captain Austin's squadron in Griffith Island, a few miles further to the westward. The dreary winter passed over all without leaving sickness or discontent, and the spring of 1851 found them ready to push their researches. We cannot trace the progress of the several parties in boats and sledges, nor would a recapitulation of their persevering struggles serve any other purpose than to unfold another chapter fraught with the heroic endurance of hardships, the indomitable courage, the invariable cheerfulness under the most depressing trials, and the unconquerable perseverance through every obstacle, characteristic of British seamen. The miles travelled by the several parties were calculated by Dr. Sutherland to amount to 2,000. Mr. Penny made every effort to ascend the Wellington Channel, but his success was small when compared with his vast endeavours. At one time his sledge was stopped by open water, and when, after incredible labour, a boat was brought up to the spot, its progress was presently checked by "thick-ribbed ice."

The difficulties of the explorers at this stage of their proceedings were enhanced by their imperfect outfit of sledges and other appliances for locomotion on land. Their sea equipment from Her Majesty's

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dockyards does not elicit any praise from Dr. Sutherland, who appears always more happy to praise than blame:

"The saws (for cutting the ice) had been supplied to our expedition from Her Majesty's dockyard at Woolwich, and they were said to be on an improved plan. Perhaps they were; but however plausible the idea of the 'pitman' (a heavy ball at the lower end) might be to the inventor, we found that they would not work at all until the form of the teeth was altered and the 'pitman' was removed altogether; after which they were found to answer very well, having been reduced to answer the description of saws used by the whalers in Davis Straits for at least thirty years."

Every inlet to the westward of the Wellington Channel was examined, and the conclusion to which both Captain Austin and Mr. Penny arrived was that Sir John Franklin had not gone to the westward or south-westward. He must then, they inferred, have gone up the Wellington Channel, which might have been pervious in 1846, "a remarkably clear season," though impassible in the spring of 1851. Previous to the return of both expeditions in 1851 Captain Austin had a long and anxious conference with Mr. Penny as to the propriety of braving another Arctic winter and renewing their efforts in the spring of this year. Their remaining provisions were sufficient, their crews were healthy and willing. Mr. Penny, however, determined to return to England, they having done, in his own energetic language, "all that men could do." This speech has been quoted and twisted to a meaning never intended by Mr. Penny. It has been construed as a declaration on his part of the permanent impassibility of the Wellington Channel and the inutility of any further search for Sir John Franklin. Mr. Penny's subsequent proceedings have amply refuted such a construction of his language to Captan Austin at Griffith Island, for immediately on his arrival in England he earnestly sought for a screw steamer, with which he offered to proceed northward as far as possible without delay, in order that he might be near the field of his proposed operations in the early spring. "Oh, for a boat!" was the generous and ardent seaman's instant exclamation when his sledge was brought up by open water in Wellington Channel; and again and again did he express to his brother officers his conviction that a screw steamer could bore its way where boats and sailing vessels would be baffled. He always leant to the opinion that the Wellington Channel was not permanently barred by ice, but had a communication with the Arctic Ocean; and whatever opinion he entertained he always frankly expressed. He told Lieutenant Osborn that he had seen "enormous numbers" of whales running southwards from under the ice in Wellington Channel. The conclusion to be drawn from this fact is that the Wellington Channel, in its course of forty-five miles, has alternations of ice and open water, for the breath of the whale ceases the instant the animal is under water, whether clear of ice or not. The Greenland whale can remain under water from ten to twenty minutes, and its *maximum* velocity is stated to be six miles per hour. Now, this very distance, and no more, may be

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fairly assumed as the utmost extent of the frozen surface of ice to the north-west under which the whales swam (from clear water to clear water), running south in "enormous numbers."

Our readers must not estimate the value of Captain Austin's and Mr. Penny's expedition by the brevity of our notice of its details. We think those zealous and able navigators have done much by proving where further search need not be made, and thus sparing the expenditure of life, labour, and money in a wrong direction. But, some may ask, what is the use of further expeditions; for, if Sir John Franklin and his crew have escaped the perils of the deep and the icy horrors of the Arctic zone, they must ere this have been starved for want of supplies? The opinions of experienced travellers and the most learned geographers are alike against this desponding view. It is by no means a fact that the cold is more intense and the supplies of food more scanty the nearer you approach the Pole. The English navigator Willoughby, with the whole of the crews of both his vessels, amounting to sixty-three souls, was frozen to death while wintering on the coasts of Russian Lapland (lat. 68° 15′) in the year 1554, while the enterprising Dutchman, Wilhelm Barentz, forty-three years later, passed a winter of more than eight months' duration on the north-eastern coast of Novaia Zemlia (lat. 76°), and of his whole crew, amounting to seventeen, only two died. And what was the outfit of a Dutch crew in the sixteenth century compared with that supplied to the *Erebus* and *Terror* in 1845; On these heads we recommend a careful perusal of several letters of Mr. Augustus Peterman, addressed to Sir Francis Beaufort, and a paper on the Distribution of Animals available as Food in the Arctic Regions, printed in Captain Mangles's little book, whose title we give at the foot of this article. We have already quoted a letter addressed by Mr. Penny to the President of the Geographical Society, in which he advocates a search for the missing expedition in the great Arctic Ocean which the Russian navigators Wrangel and Anjou saw stretching beyond the North Cape of Asia, and which has been proved to roll in unfettered freedom beyond that icy barrier which ordinarily checks Arctic navigation, and extends in all probability to the north of both the American and Asiatic continents. There is a narrative of four Russian sailors who subsisted in Spitzbergen on the product of the country for six years and three months reprinted in Captain Mangles's volume from the *Annual Register*, for 1774. We apprehend that many educated Englishmen have read this narrative, as we ourselves confess to having done in our boyhood, with a feeling akin to that attendant upon a perusal of the fictions of De Foe; but we believe that it is well authenticated, and has vast significance when perused with reference to Sir John Franklin and his ships' companies. If four Russian mariners, with a few ounces of tobacco, twelve musket charges of powder and shot, and a small bag of flour, as their only stores to start with, could subsist for six years and three months in Spitzbergen, how long can the crews of two English men-of-war, commanded by officers of the Arctic experience, fertility of resource, and unconquerable courage of Sir

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John Franklin, and Captain Fitzjames, preserve their lives? We leave others to work out this sum, and for ourselves say, *Nil Desperandum.*

We do not write in this hopeful strain at random, or wantonly to awaken delusive hopes which we feel to be unfounded, but deliberately express convictions formed after much thought, diligent inquiry, and painstaking investigation. Neither are we alone in our hopeful mood. The unthinking multitude may have been disappointed by the termination of the Austin and Penny expedition. It returned sooner than was expected, and was not attended by the results hoped for. But neither the Government nor Sir John Franklin's anxious but well-informed friends considered this expedition as an extinguisher of hope—a stopper upon further search. And, accordingly, since Captain Austin and Mr. Penny returned, an expedition, under the command of Captain Sir Edward Belcher, R.N., has been commissioned to proceed direct to Wellington Sound. This expedition sailed from England in April last, and consisted of H.M. ships *Assistance* and *Resolute*, with the two screw steamers *Pioneer* and *Intrepid*, of 60-horse power each. H.M. ship *North Star* will be stationed at the mouth of the Wellington Channel as a store ship. The squadron will thus be enabled, we trust, to await a favourable moment for pushing forward, which has been so often lost while vessels have been performing their outward voyage from England. Nature will often in a single hour make openings in the ice which all the saws in all Her Majesty's dockyards could not accomplish in the course of an Arctic summer. Sir E. Belcher has now an opportunity of awaiting the favourable moment, and fulfilling the desire so resolutely expressed by Lady Franklin. "By that passage" (Wellington Channel) writes her ladyship to a friend, "doubt not the ships have gone; and by that, believe me, they must be followed."

To the above we may add the following evidence as to the *anticipated* possibility of Franklin being absent seven years from an authority well informed on Arctic matters. He says:—

That Franklin and his officers anticipated such a contingency is, I think, placed beyond any reasonable doubt. We have evidence which cannot be disputed.

We have *first* the evidence of Captain Martin, who solemnly and sincerely declared before a magistrate, that on the 22nd July, 1845, he fell in with Franklin's ships in lat. 75°, long. 66° W.; that he was fifteen minutes alongside, and conversed the whole time with Sir John Franklin and Reid, the ice master; that on asking Sir John what provisions he had, he answered, "Five years, and, if necessary, could make them spin out seven years;" that he would lose no opportunity of killing birds, and whatever else would be useful in keeping up the stock; that he had already got several casks of birds salted, and had at that time two parties out shooting birds, which were numerous; that on the 26th or 28th some of the officers dined on board his (Cap-

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tain Martin's) ship, and said the same thing; and that they expected to be absent about four or five or perhaps six years.

Secondly, we have the evidence of Mrs. Blankey, the wife of Blankey the ice master of the *Terror*, who in July, 1845, wrote to his wife telling her that if they are not home in the fall of 1848 or spring of 1849, she may anticipate they have made the passage, or *likely to do so;* and if so, they might be from five to six or even into the *seventh* year.

This letter was written from the Whalefish Islands, in July, 1845. Mr. Blankey was an experienced man in those seas. He knew the difficulties. There was but one mess for all the officers in the ship, and whatever he said was unquestionably the general talk, feeling, and intention of the whole.

Thirdly, we have the evidence (which requires to be more sifted) of Captain Bouist of the French Navy, who is stated to have mentioned to Captain Trotter, that he dined in company with Franklin's officers at Woolwich, and was informed by them that they had no fear in respect of their provisions, which, with what they would shoot, they thought would last *seven* years.

A gentleman residing at Southampton states, that Le Visconte, one of the lieutenants, said, that they should abandon the ships, and try for the passage with the boats.

Extract of a Letter from one of the Officers of H.M.S. "Plover."

H.M.S. Amphitrite, Honolulu, Sandwich Islands, May 29, 1852.

I take up my pen with much pleasure to resume to you the account of our journey to the Sandwich Islands. We arrived here on the 21st of April, and as the 22nd was the day we calculated upon previous to our leaving, the guess was not a bad one as to time. Our journey was not very agreeable when taken on the whole; the immense crowds we had to contend with *en route* for California, together with a degree of uncertainty that we felt about the ship from Valparaiso, acted as a damper upon us occasionally. However, as we were getting forward to the rendezvous appointed without loss of time, we were obliged to be satisfied with that feeling, and wait patiently the course of events. Fortunately our patience was not much tried, as the *Amphitrite*, to convey us north, arrived on the 7th of May, fourteen days after us. She is in very good time, and, as Captain Frederick enters most willingly into the view of getting forward, we hope to reach the *Plover* before the 3rd of July, in ample time to do all that is expected from us. As I intend sending you an account, by the return of the *Amphitrite*, of our trip to Point Barrow in the boats, which we hope to reach, in order to gain intelligence of Captains Collinson and M'Clure, and also

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for the purpose of fixing upon a position there for the *Plover* to winter, I defer saying at this time any thing further on the subject of our intended proceedings, preferring to tell you what we have been able to do, rather than what was anticipated. The season is every thing, all depends upon it; if we succeed in getting the *Plover* to Point Barrow, it will be most fortunate, as the position is so good.

In the event of our not hearing of Captain M'Clure this year, *nothing but a steamer will be of any use to communicate with us in* 1853; besides there will be a necessity for it, to follow Captains Collinson and M'Clure with efficient assistance; the length of the absence of the latter, by that time, will make such a step necessary. It is much to be regretted that the advantage of having a vessel in so desirable a position as Point Barrow should be left to the chance of the *Plover* being able to get there, as it is well situated for parties to fall back upon, from Captain Collinson's expedition to north and east, and also for those of our long missing countrymen under Sir John Franklin from the north and west. They will make for it, no doubt, from both quarters, as the most direct in their route towards succour and safety. These circumstances make the necessity for the assistance of a steam tender to the *Plover* apparent; it would also enable the search to be extended in the direction that Sir E. Belcher's parties may be expected, as it is not at all improbable that some of his extended parties in the second year will not be far from Point Barrow.

On the receipt of the return dispatches by the *Amphitrite*, which will arrive in England about Christmas, the state of the Behrings Strait expeditions will no doubt be brought under consideration. Where they cannot go out on the east side without the assistance of steam, rely on the west side, where the difficulties of the navigation are increased by the shoalness of the water, the same auxiliary must be still more advantageous.

In the papers brought by the *Amphitrite* from Callao, we had the pleasure of seeing the appointment of the officers to command in the new expedition to the Wellington Channel; they are nearly as I expected with the exception of Pullen; I fancied that he would have been included in some way. On consideration, I see that it was not possible, as M'Clintock and Sherrard Osborn are not to be surpassed in their way. Nor do I see how better could have been done in the choice of the Captains; and I take the liberty to prophesy that what they leave undone it will require a person out of the usual run to accomplish. I have seen no names of the officers of the expedition except the four in command; but I conclude and hope that Pim will be of the number. I hope they have orders to place provisions at Melville Island, as M'Clure will get there if it is to be done, and will expect such assistance. If he has not been so fortunate, we may look for him and Captain Collinson returning this season to try some other opening; in which case I think Captain Collinson would try the course now generally recommended, which is not very different from that proposed by Captain Beatson, whose name I have been looking anxiously for in the papers, not that I fancied he could do much with so small a force;

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but it might have the effect of leading people's minds* in that direction. As I see no mention of his name, I fear he has not been able to get away; indeed I thought at the time we visited his vessel at Limehouse that he would be very late, if he succeeded in getting away this season. If such is the case it is not to be much regretted, as his expedition was altogether on too small a scale to be successful in carrying out the search proposed.

My friend gave you an account of our trip up to San Francisco, where we remained but two days. It is almost worth the trouble of a journey from England to see it; you have American enterprise in every shape. The whole town was burnt to the ground not ten months before, and at the time of our visit no appearance of the destroyer remained. The place had risen up again as if worked by one of those ingenious contrivances they have at theatres for winding up scenes from underneath the stage, and as suddenly causing them to disappear; indeed the latter actually took place, as I am told that a house sunk out of sight, from the piles underneath giving way.

The principal part of the city, that adjoining the water, and to some extent behind, is built upon a platform of fir plank laid upon piles, to carry the level of the wharfs, constructed in the same way, (and run sufficiently far out to allow the largest ships to lay alongside,) back to where it takes the rising ground behind, so that you have whole streets with the tide ebbing and flowing underneath them. The people also are peculiar, and have become a race of themselves, known from the quantity of hair they cultivate; I might also say, without defamation, dirt; and from generally wearing boots in the Hessian style, found convenient I suppose for working in the mines. We were not sorry at an opportunity by a Sydney vessel to get away so soon after our arrival, although we had great cause to be so afterwards, as she turned out to be of the worst description, and leaked so badly that the pumps had to be kept going every hour. Our fellow-passengers were of the worst description of Sydney emigrants returning from California, with the hope of reaping a golden harvest in their own newly-discovered mines. Fortunately we made an average passage of 17 days, and landed here on the 21st April, since which time we have amused ourselves practising with the magnetic instruments, and rating our chronometers, &c.

The Consul General here was a celebrated man in the wars of Bolivar, in South America (General Miller). He has treated the *Plover's* party with great kindness, and appears to take a great interest in Arctic matters.

These islands have great interest with naval officers, or ought to have, from the fact of having been discovered by Captain Cook, and from his having met his death at them. The length of my letter warns me not to try your patience too much. We sail this evening direct for Port Clarence.

* The United States government are about to fit out an expedition to survey Behrings' Straits, where many hundred whalers now annually resort.

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It seems to be now generally understood that Dr. Rae's offer to the Hudson's Bay Company, to continue his explorations up the eastern shores of Victoria Land, from his farthest point in the summer of 1851, and to connect them with Lieutenant Browne's discoveries in Peel Sound, has been accepted, and that he will leave England early next year, and in time to reach the spot for the summer journey. That this is most desirable no one can doubt, and it is highly creditable to the Hudson's Bay Company, who have done so much towards Arctic discovery.

It will solve an interesting question as to the continuity of Victoria Strait and Peel Sound, on the South of Barrow Strait; which, if they are found to connect, will be the first discovered continuous north-west passage from the Atlantic to the Pacific, although of course not an available one; unless indeed Mr. Kennedy, in the *Prince Albert*, has already found an opening at Brentford Bay, in Prince Regent's Inlet.

As a geographical problem of great interest, every one will rejoice at this undertaking; but as to its affording any clue to the fate of Franklin, we conceive no such idea can enter into the mind of any man.

Very different indeed in its result might be the continuation of Dr. Rae's discoveries in the spring of 1851 on the *west* coast of Wollaston Land, and we heartily wish that the Hudson's Bay Company would vigorously follow them up. There is every inducement held out to them to do so. Dr. Rae speaks of the natives he found there as "good, harmless inhabitants," and if it was not exactly a land of milk and honey, it was a land of some promise; "all were very fat, and had evidently abundance of seals' flesh and fat, which was carefully deposited in seal-skin bags under the snow. There would be no fear of want of supplies, for Dr. Rae scarcely touched his pemmican, but kept his party with his gun. This goodly land is easily approached on the ice from the Coppermine, and by the Dolphin and Union Straits. The whole of this tract is peculiarly the child of the Hudson's Bay Company. Step by step has been the growth of our knowledge of this interesting part of the Arctic seas, and all owing to the unsurpassed exertions and laudable efforts of the Hudson's Bay Company and their enterprising officers.

Why the important discoveries made by Dr. Rae, in a line of search now rendered doubly interesting as intersecting the route of Collinson and McClure, should be abandoned, we are wholly at a loss to understand; but as no rumour of the intention of the Hudson's Bay Company to continue them has yet reached our ears, we reluctantly arrive at the conclusion that they are about to relinquish it at the very moment so much might be expected.

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Voyage of H.M.S. "Calypso," Captain Worth, to the Pacific.

Continued from p. 490.

I made sail from Pitcairn Island at 6h. P.M. on the 11th, for Tahiti, steering W.¼S., intending to sight Incarnation Island, the existence of which island is denied by the people of Pitcairn. The wind up to the 14th was from the eastward, though occasionally shifting for a few hours to the N.W., and the weather fine; but on the afternoon of that day it became unsettled, with squalls and rain from N.W., ther. 78° and 79°, bar. 30·07; and, on the next day, the wind increased to a fresh gale, with severe squalls and heavy rain, which obliged us to reduce the sail and strike topgallant masts. This weather continued till the 19th, the wind shifting occasionally to S.W., and at length continued from E.N.E.; a westerly current averaging from eight to ten miles daily had been experienced for several days past. From the 21st the weather continued fine, and on the 23rd the island of Maitia was seen E.b.S., about twenty miles distant, which is very high and of a round form. Within half an hour the island of Tahiti was observed west, the wind being still steady from E.N.E., and the weather fine, and at 3h. 40m. P.M., we entered the harbour of Papeite, and anchored in 11¼ fathoms. On the morning of the 26th, I left Papeite, and anchored in the harbour of Taloo, Eimeo; the weather during our stay was very unsettled, sometimes blowing strong with heavy showers of rain, and extremely close and sultry, the ther. ranging from 84° to 85°, bar. 30·07. On the 31st I sailed from Eimeo with the land breeze, and steered for the island of Huahine, having a light breeze from the eastward, and anchored at 10h. 40m. A.M. the next day, at the entrance of the harbour, the wind, as usual, blowing directly out, and kedged the ship to the anchorage off the settlement.

Having, in my last years remarks, reported fully upon the Society Islands, it is needless I should do so here, and shall merely state that having on this occasion visited, besides those of the last three named islands, Raiatea and Boro Boro, which occupied from the 23rd February till the 20th March, in consequence of being detained several days in each of the harbours of the N.W. group, *i.e.* Huahine, Raiatea, and Boro Boro, from a continuance of extremely tempestuous and unsettled weather, with the wind at N.W., which blows directly into their harbours, and which are much too intricate and narrow to be attempted under such ci cumstances; and having sailed on the morning of that day for the island of Upolu, Navigators Group, I steered on a west course, with the wind a moderate breeze from the southward, and having passed about seven miles to the northward of the island of Moupiti, to pass which the ship was kept W.b.S., she was again steered west, with a view of making Rose Island, (a small island to the eastward of the Navigators Islands,) the wind varying from E. to S.E.,

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accompanied with a heavy easterly swell. On the 24th, at 5h. 30m. P.M., the island was seen ahead, but, from its extreme lowness, the trees growing upon it could only be made out before dark. At daylight the next morning the Island of Manua was observed W.b.S., and shortly after the islands of Oborsonga and Ofoo, W.¼N. I should here observe that from information I gained on my arrival at Upolu (Navigators Islands), a coral reef exists at about eleven miles N.W. of Manua, of which no mention is made in Wilkes' American Ex. chart, (though I believe it is noticed in his enlarged plan of the group,) nor on any chart on board the ship. This reef from being almost in the track of vessels visiting the Navigators Islands from the eastward, is certainly dangerous. We passed close to the north shore of these islands, which appears clear and bold, heaving too for a short time to communicate with a canoe which came alongside with two natives.

The islands of Manua, Oloosuiga, and Ofoo, rise abruptly from the sea, and have apparently no anchorage; with a shore reef surrounding each. They are richly wooded from the beach to their summits, with great abundance of cocoa-nut, bread-fruit, plantain, and other trees common amongst these islands, indeed their appearance was most luxuriant.

At 4h. P.M. the island of Tutuila was seen W.S.W., and, having run to within thirty miles of the island of Upolu, at 2h. 30m. A.M., on the 26th, sail was shortened till daylight, when the island was seen S.S.W., and sail again made. We ran along the land to the bay of Apia, with a view of observing the appearance and peculiarities of the island, which is rich and beautiful in the extreme, being thickly wooded from the shore to its highest point.

Upolu is of moderate height and contains rich valleys in which grow cocoa-nut, bread-fruit, plantains, &c., in great profusion. We passed along the outer reef at the distance of about 1½ miles, but observing the water discoloured in several places I hauled further off. I afterwards learnt that shoals extend on this side of the island in some parts to fully that distance; I should, therefore, recommend strangers to keep at least from 2½ to 3 miles off the reef, when running along it.

Wilkes, I believe, in his survey, does not mention these shoals, nor can I take upon myself to assert they exist, though the sources from which I gained my information were both respectable and intelligent. It was also reported to me that a shoal existed about three or four miles off the reef to the northward of Apia bay, with apparently 16 or 18 feet water upon it. This shoal was sought for by the *Juno* and *Dido* as I was informed. I also sent boats out with the master and the pilot of Apia, but it was not found on either occasion.

At 10h. A.M., having received a pilot, I entered the bay of Apia, and moored east and west, with an open hawse to the northward or entrance of the bay, in seven fathoms, having forty fathoms on each anchor, and laid out a kedge astern to keep it from fouling during the night land breezes. The trade-wind from the eastward, however, blowing

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almost constantly, but little chance occurs of doing so. Apia Bay being very correctly surveyed by Captain Bethune, there remains nothing for me to add to it. From his plan it will be seen that the bay is entirely open to the northward, and it cannot be considered a safe anchorage in the bad or rainy season, when the islands are subject to severe gales from the N.W., which send in a tremendous sea, so much so that were its full force to come home in a direct line from its entrance, it would be impossible for a ship to hold on. Fortunately, however, it seldom happens; the N.W. reef partially sheltering the anchorage from that quarter from whence the violence of the gales is usually most severe and destructive; the ground being, likewise, for the most part sand, added to its confined space, which prevents a ship veering to any extent makes it still more unsafe.

Whilst the *Calypso* was at Apia, i.e., from the 26th March to the 6th May, the weather was generally speaking fine; some squalls of rain and wind occasionally occurred, but the wind generally being from the east, no inconvenience was felt; the ther. ranging from 80° to 84°. The facility of watering is a great advantage; as is, also, the abundant supply of fresh pork, poultry, vegetables, and fruit, which are procurable at reasonable prices; fresh beef is likewise occasionally to be had; but, during the time of my visit to the Navigators Group, the native wars had caused so much destruction to the lands, and stock of this description, that it was procured but seldom, and with much difficulty.

The capabilities of these islands appear great, the land being extremely rich and the climate good, but the wars amongst the natives being incessantly going on, added to their habitual idleness, prevents the production of more stock and other articles, (with the exception of cocoa-nut oil, which they barter to the foreigners, for exportation,) than supply their wants together with that of the foreigners residing amongst them, whose principal employment is the furnishing of whale ships that call at Apia for refreshments.

On the general Character and Aspect of the Samoan or Navigators Islands.

The islands composing this group are of volcanic origin, many craters being still to be seen, one of which on Upolu now forms a lake of about two miles in circumference. They are not only beautiful, possessing every description of mountains and valleys, but also remarkably fertile, and containing many thousands of acres of rich lowland; both hill and dale are thickly wooded, with a great variety of plants; perhaps there are no islands in the Pacific presenting a wider field for botanical research. The rapid growth of all kinds of vegetation is almost incredible.

The articles on which the natives principally depend for their subsistence, are yams, tarro, breadfruit, and cocoa-nuts, which are in great abundance. With few exceptions, these islands are well watered;

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but their great fertility is, in a considerable degree, to be attributed to the heavy dews which fall during the night, amounting almost to small rain.

Tutuilla and Upolu present a variety of landscape, including cascades and rivers, one fall, in the latter island, exceeding seven hundred feet, which supplies a beautiful river, that flows into the sea at Apea, and from which the shipping procure their water.

The climate of these islands is generally considered good, though not, perhaps, equal to that of the Georgian and Society groups; much however of the sickness experienced by the natives arises from exposing themselves to the heavy night dews, by sitting outside their houses in gronps till a late hour, during the hot weather; and which exposure is carefully avoided by foreigners, who invariably close their doors and windows soon after sunset to exclude it. With reasonable care both foreigners and natives enjoy good health.

The diseases most prevalent amongst the natives are, elephantiasis and affections of the eyes. The former is supposed to arise from sedentary and indolent habits, coupled with the nature of their diet, which is almost entirely composed of vegetable substances. The latter may in a great measure be attributed to the bright glare of the sun upon the sand and sea, and their custom of having so much smoke in their houses at night, for the purpose of driving away musquitoes.

The wet season usually commences in November, and continues till the beginning of April, when much violent rain falls, but not continuously, several days together intervening of very fine and settled weather. At this season the islands are occasionally visited with severe gales, which cause great destruction, blowing down house, and tearing up large trees, &c. During the other parts of the year it is generally fine clear weather, with the trade wind blowing throughout the day.

The articles produced for exportation are cocoa-nut oil, and arrow-root; these, with moderate industry on the part of the natives, and suitable compensation from foreigners, might be furnished to almost any extent. Sugar-cane grows most luxuriantly; coffee has been introduced, and thrives exceedingly well; and there is no doubt but that both sugar and coffee of the best quality might be exported extensively: indeed nearly if not all the productions of tropical climates might here be cultivated in rich profusion. At present, from the indolence of the natives, and the indifference of the few foreigners residing amongst them to the cultivation of land, the mere supplying of shipping with fruits, vegetables, hogs, and poultry, is nearly all that is attempted.

The principal harbours are Pango Pango in Tutuilla, and Saluafata and Apia in Upolu. At each of these harbours abundance of wood and water, with all sorts of refreshments, may be obtained in great quantities.

The goods imported by English and American whalers, and a few trading vessels from Sydney, are blue, white, and unbleached cottons, printed calicoes, wearing apparel, hard wares, muskets and fowling-pieces, powder, shot, axes, &c.

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The male natives of these islands are exceedingly well formed, usually of a large frame, tall, and muscular, with pleasing countenances. The females are much inferior in this respect to the males; many of them, however, have good features.

As a people they are of a friendly disposition, and usually kind to strangers. Their minds are lively, and in many instances very energetic; nor are they at all deficient in intellect. Both adults and children make rapid advances in the acquisition of knowledge where teachers have been introduced amongst them.

The population of these islands appears to have been greatly overrated. I have observed it to be stated by various authorities as amounting to sixty and even one hundred thousands; but it has been lately ascertained that its utmost limit does not exceed forty thousand, full seven-eighths of which, I am informed, are nominally Christian.

The Samoans are remarkably observant in their deportment and marks of respect towards their superiors; using quite a different style of language when addressing them, and which is termed the "Chiefs' language." A common man, for instance, will not venture to stand up in the presence of a chief, but would either sit, or bend himself down, resting his hands on his knees; nor would he attempt to pass before a chief, but would wait till he had passed; and should he have an axe, knife, or club, &c., in his hand, and meet a chief, he would not only step out of the way, but would put the axe, &c., behind him till the chief had passed. Again, should persons be talking together, or be at work, or amusing themselves, they would immediately cease whilst their superior was passing. In their public meetings, or fonos, they are extremely, indeed tediously, ceremonious. If a speaker of some chief has but to reply yes or no to some question under consideration, he must first employ fifteen or twenty minutes in calling over the titles of the chiefs of all the principal districts, whether they are absent or not; to omit a single title, would be considered a mark of great disrespect, and would formerly have led to serious consequences, probably to a war.

The natives are exceedingly dexterous in wielding the club and throwing the spear, and were formerly a warlike people, and generally in a state of hostility with their neighbours. A number, however, who have with some degree of sincerity embraced Christianity, profess to have a great aversion to the horrors of war.

It can scarcely be said that the Samoans have any government, though they have various customs by which their conduct is regulated in all their political affairs; and certain offices are held most tenaciously by various ranks in society, descending to them either by hereditary right, or by a special appointment of their superior.

On the whole group there are five or six chiefs supposed to possess more influence than all the others. For instance, Upolu is divided into three districts, each district having a principal chief. Another principal chief lives on the small island of Manono, whose influence extends to a portion of the island of Savin. These great chiefs occasionally meet to consult on such subjects as are considered of import-

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ance, each having his advisers called Tualafele, who are respectable chiefs, and are appointed to their office on account of their sound judgment and fluency of speech; it devolves upon them to deliver the sentiments of the great chiefs at their public meetings. One or two of these may generally be found in each village.

The great bulk of the people are of various grades, but far the greater part consider themselves chiefs; indeed the great difficulty is not in finding out who is a chief, but who is *not* one!

Many attempts have been made by the Consuls and Missionaries to convince them of the advantages of enacting a code of laws, simple and adapted to their present state, and of forming an executive government to carry them into effect; but have hitherto failed. The chiefs are so exceedingly jealous of each other's power and influence, that it is impossible to get them to agree to any thing that may be recommended for the public good; as should one party agree another would oppose, if only to show his independence.

The average number of foreigners, exclusive of the missionaries, resident at Samoa, may be considered about eighty; which are principally composed of runaway and other seamen from the different whalers calling here to refit, &c.; whose conduct, generally speaking, is most disgraceful, and far more degraded, in every respect, than the heathen natives; their time being spent in a continuous round of drunkenness and debauchery, many of them keeping grog-shops of the worst description, where they entice seamen to desert, and assist them frequently in doing so. A few others, however, are getting an honest livelihood by working at different trades, such as carpenters, boat-builders, sawyers, blacksmiths, and shipwrights; and others in bartering with the natives for cocoa-nut oil, hogs, &c., with which they supply shipping. Several of these foreigners have lived many years on the islands, and have large families by native women. An institution is about to be established for their education.

There are at present thirteen missionaries distributed amongst the different islands and districts, whose exertions for the advancement and well being of the natives are most exemplary and praiseworthy, and are duly appreciated by a large number of them. They have a printing-office, and an institution for the instruction of the sons of chiefs and others in branches of useful and scientific knowledge, with a view of spreading it, through them, generally throughout these islands. These establishments are conducted with great ability and success.

Upon inquiry I found that the number and description of vessels arriving at Apia, Upolu, (which is the only anchorage that is frequented,) since 1842, is as follows:—

1842 .. 12 viz. 4 English, 5 American, and 3 Tahitian
1843 .. 23 .. 6 English, 15 American, and 2 Tahitian
1844 .. 35 .. 7 English, 25 American, and 3 Tahitian
1845 .. 42 .. 14 English, 24 American, and 4 Tahitian
1845 .. 72 .. 16 English, 44 American, 4 French, 1 Prussian, 7 Tahitian
1847 .. 47 .. 12 English, 28 American, 2 Fr., 2 Bremen, 1 Dutch, 3 Tahitian
1848 .. 14 .. 1 English, 12 American, and 1 Sardinian.

(To be continued.)

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West Harbour and Docks, Hartlepool.

The old town, bay, and haven of Hartlepool, on the east coast of the county of Durham, owe their favoured position to a bold natural headland.

The earliest distinct mention of them is in the year 1171; and history records that, in olden times, they were of much importance, and frequently the scenes of conquest.

A pier, to form a small harbour and protection to the old town, was ordered to be built in 1473. In the year 1593 Queen Elizabeth granted a charter of incorporation to the mayor and burgesses of the town of Hartlepool.

The old town and harbour in after years sunk into decay, and ultimately became a mere fishing place.

In the year 1831 certain individuals having ascertained that there was coal to the north-west of Hartlepool, possessed themselves of coal fields in that district, and in order to procure a transit and place of shipment for their collieries, originated the scheme of a railway of about twelve miles to Hartlepool, and the construction of a dock at its terminus, by excavating a portion of the old haven or harbour.

A company was accordingly formed for that purpose under the title of "The Hartlepool Dock and Railway Company," (usually now styled "The Old Dock Company,") who obtained their act of incorporation on the 1st of June, 1832.

In the year 1841, a short line, called the Stockton and Hartlepool Railway, was formed as an extension of the Clarence Railway, (nearly the oldest railway in the kingdom,) for the purpose of enabling the owners of coal fields in the south and south-west districts of the county, (and who were then alone confined to the River Tees, which is of very intricate and hazardous navigation,) to ship their coals, &c., also in the bay of Hartlepool.

In the original formation of this extension line, Mr. Jackson took a most active and prominent part; and, though encountering severe opposition from surrounding competing interests, was the great means of bringing the line into operation, and thereby succeeded in producing the much-desired railway-communication between the towns of Stockton and Seaton (a pleasant and rising bathing place) and Hartlepool, as well as in opening out increased facilities for the transit and shipment of the rich mineral districts of the southern and western parts of the county.

The object of the promoters of the Stockton and Hartlepool extension was, in the first instance, to form a dock of their own, and a separate entrance harbour to it at the terminus of their line, and about half a mile in the bay, from the old harbour. The old dock company seeking to avoid competition, however, offered to ship in their dock the traffic from the Stockton and Hartlepool Railway upon certain terms, instead of seeing a new set of docks and another harbour esta-

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blished near them. The result of the negociation was, that a temporary and experimental agreement for such shipping was entered into between the two companies for three years.

It was very soon proved that the shipping charges of the old dock company were so partial and excessive, and that the accommodation they had provided was so extremely inconvenient, as to amount practically to a prohibition to the southern coal owners sending coal freely for shipment at Hartlepool.

Repeated attempts were made to get the old dock company to remedy these evils, but all proved ineffectual.

The consequence was, that after the expiration of the three years' agreement, steps were revived for the construction of the new dock and harbour in the precise situation originally intended in the bay. Application was accordingly made to Parliament, in the session of 1844, for an Act for the purpose, and it received the royal assent on the 23rd of May, 1844.

The promoters (of whom Mr. Jackson was also the most prominent and energetic) were incorporated as "The Hartlepool West Harbour and Dock Dompany," and hence the establishment of the west harbour and docks in the bay of Hartlepool.

Notwithstanding the approval of the measure by the Admiralty, the bill was severely opposed in Parliament by the old dock company and persons in their interest.

Petitions very numerously signed were presented to Parliament in favour of the New West Harbour and Dock, from the shipping interests of the ports of Newcastle upon Tyne, North Shields, South Shields, Blyth, Sunderland, Scarborough, Whitby, Yarmouth, Lynn, Ipswich, and Hartlepool; also from the fishermen of Hartlepool (several hundreds in number); from the owners of collieries in the southern and western districts of the county, desirous to ship in the west dock, and representing an annual production of upwards of 500,000 tons; and also from eight captains of vessels who, in attempting to make the old harbour in a severe gale from E.N.E., on the 26th of February, 1844, (when the west harbour and dock bill was in Parliament,) were wrecked, under distressing circumstances, on the very site of the then proposed new harbour; and the whole of whom, according to the evidence of one of the captains, could have saved their ships if the west harbour had actually then been formed.

It may be here stated that the most dangerous gales on that coast are from E.N.E. to N.N.E., and that no ship can, in such storms, take the old harbour of Hartlepool without the aid of steam, the channel into it laying N.N.E.; whereas any ship can in such gales sail into the West Harbour (its course being N.W.) with perfect ease and a flowing sheet.

It is, therefore, at once apparent why the West Harbour was so strongly advocated in Parliament by the shipping interests of nearly every port between the Thames and the Tyne.

The works of the West Harbour (then designed to contain about thirteen acres) and of the inner dock (of about eight acres) were com-

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menced in the spring of 1845 and were completed and opened with great public *éclât*, and in the presence of several thousand people on the first of June, 1847. On that occasion the *Prima* a barque of Jersey, and a schooner of London, the *Admiral Benbow*, entered the harbour and dock from the sea, and so excellent and expeditious were the shipping accommodations, even at that period, that, in the short space of two hours both vessels were laden with full cargoes of coal, and proceeded to sea the same tide in which they entered.

During the first twelve months after the opening of the West Harbour and its first dock, upwards of 1,000 ships entered, and upwards of 130,000 tons of coal were exported.

The West Harbour and docks soon recommended themselves, and as they became gradually known were appreciated by the shipping interest. Hence shipowners have sent their vessels to the West Harbour and dock in great abundance, and the trade has, consequently, increased to a considerable and important extent as the following summary will show:—

	Ships entered to load and for refuge. No.	Coal and coke shipped. Tons.
From June to December, 1847	460	54,202
For the six months ending June, 1848 ..	560	78,439
- - Dec. - ..	682	90,582
- - June, 1849 ..	994	137,451
- - Dec - ..	1759	251,503
- - June, 1850 ..	1845	274,094
- - Dec. - ..	2041	315,896
Totals in three years and a half	8341	1,202,167

The above are exports of coal and coke alone, but so soon as the railway communication is open (and which is now rapidly drawing to a completion) between Leeds, the West Riding of Yorkshire, and South Lancashire and Hartlepool, the imports and exports of merchandise, &c., at the West Harbour and docks are certain to be very large, and to give a corresponding addition and importance to the trade and position of the undertaking.

So great has been the trade already to the West Harbour and the one dock, that it has become necessary to provide as well further dock accommodation as increased harbour space, and, consequently, another dock of twelve acres was commenced about twelve months ago, is on the eve of completion, and intended to be opened early in June next. In addition to the above two docks, provision is being also now made for two more docks, so that as the trade requires them they may be speedily executed. Additions to the West Harbour are also in course of formation, by which, during the present year, it will be increased to an aggregate area of about forty-four acres, thus rendering it the largest pier harbour on the whole of the east coast of England and Scotland.

With the west harbour thus completed, and its two inner docks of twenty acres, which in a few months will be in existence, there will be

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the means of accommodating and sheltering upwards of 500 sail of ships at one time.

Many valuable ships of a large class of merchantmen have been loaded and sent safely to sea from the West Harbour, bound for the Cape of Good Hope, the East and West Indies, the various Mediterranean, Russian and northern ports.

Since the opening of the works in June, 1847, many heavy gales and storms have occurred, which have proved the stability of the sea works and the value of the West Harbour for shelter and safety to ships on such occasions. This may be exemplified by a reference to three of the gales of great severity. The first was a gale at N.E., on the 30th of September, 1849, when seven vessels were saved by the West Harbour, while seventeen were cast on shore after attempting the old harbour. On this occasion the West Harbour Company's own lifeboat, during a long and arduous struggle for nine hours, assisted during a portion of the time by the Seaton lifeboat, was the means of taking from those wrecks sixty-five lives; only one man in the whole of the ships perishing. The second gale was one at S.E. on the 3rd of December, 1849, when nine vessels (among others) in running for the old harbour were wrecked; while, in the same gale, nine ships took the West Harbour in perfect safety. The third gale referred to was one also at S.E. on the 30th of March, 1850, during which ninety-three ships took the West Harbour in two tides; in one of which, and during the heaviest of the gale, fifty-five ships safely entered the West Harbour in forty-five minutes. The masters of six of these ships had never been in it before.

The exertions which Mr. Jackson has made on all occasions in promoting the undertaking of the West Harbour and docks, and the railways connecting themselves with it, have been most exemplary and extraordinary; and he has also ever been foremost in affording efficient service to all vessels entering the West Harbour. Often has he boldly gone out to sea in heavy storms in one of the west harbour steamboats, for the purpose of rendering assistance to vessels in distress, and in many trying instances he has been eminently successful in so doing.

The company possess a great extent of land adjoining their docks, and which they are selling off for buildings. A large town, indeed, is fast springing up at West Hartlepool, which it is generally acknowledged will, in the course of a very few years, become a place of considerable importance. The streets are laid out with judgment, the whole sewerage is undertaken by the company, upon uniform and sanitary principles, and the greatest regard is shown by the company in all respects to the drainage and health of the new town.

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The Slave-Trader Kyetan.

(From the *Anti-Slavery Reporter*, August 2.)

Caetano José Nozolini, usually known by the name of Kyetan, and who, under that name, has figured largely in the slave trade annals for the last 25 years, and was looked upon as the leviathan of the hateful traffic in the countries north of Sierra Leone, died at the Cape de Verde Islands in the month of June last.

Nozolini, or to call him by the name by which he was generally known, Kyetan, was born at Fogo, one of the Cape de Verde Islands. His father, a Spaniard, was a drunken, dissipated character, and left his son no better inheritance than the necessity of enlisting as a private soldier in the local regiment, from which he was, after a time, drafted to Bissao, considered in those days, at the Cape de Verde Islands, as a kind of penal banishment.

At this small and distant settlement, the exchequer of Portugal does not permit the pay of the soldier, or of the military and civil authorities, to be made in specie. By arrangement between the authorities at Porto Praya and the leading mercantile men of the place, the salaries of all officers, civil, military, and ecclesiastic, are paid in merchandise, such as tobacco,gunpowder, and cotton goods, at fixed prices. The same individual also furnishes the rations to the military, and, in return, he farms the duties payable on the merchandise imported into the settlement, fixed at the high rate of 23 per cent. *ad valorem*, and the duties on the produce exported, at the rate of 5 per cent. on the declared value. Of necessity, such a mode of paying the services of civil and military *employés*, and the high import and export duties imposed, compels every one to be a trader, in order to realise the value of their merchandise payments in available produce, such as ivory, bees'-wax, hides, &c., and also tempts them to become smugglers, in order to evade the oppressively high duties.

A man of Kyetan's sagacity, shrewdness, and energy, soon profits by such a state of things, and he was enabled in a very short time to purchase his discharge, and become a resident trader; nor was he long in perceiving the great profits to be made by the slave trade, if successful, and he soon extended his operations in this traffic as far as the Sherbro, from which river he was so fortunate as to get some cargoes safe across to Cuba; and he suddenly became a rich man, and returned to Cape Verde Islands, not as he left them, the shoeless, penniless, private soldier, Kyetan, but as the "Illustrissimo Senor Caetano Nozolini." Doubloons paved the way for his welcome reception and advancement, and after liberally dispensing a large portion of his ill-gotten wealth among his relatives and the government officials, he returned to Bissao with the military commission of an unattached captaincy, and in high favour with the chief authorities at Cape Verde Islands.

At this time, after his late successful operations in the slave trade, Kyetan was indifferent to the advantages of the valuable legitimate trade which the river Jeba afforded. Not so the other traders, who possessed neither his energy nor spirit of enterprise; they, however,

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met with every encouragement to pursue the lawful and profitable commerce which was open to them from the mercantile houses at St. Mary's River, Gambia, and from the French houses at Gorée and Senegal, who kept the traders well supplied with merchandise needful for their trade.

A French trader from Gorée having proceeded up the river Jeba in his vessel to trade direct with the natives, considering himself at liberty to do so, and the circumstances coming to the knowledge of Kyetan, who, if not then governor *de jure*, made himself so *de facto*, he despatched a party of drunken native grumetta armed, to bring down the French trader and his vessel. These men murdered the unfortunate Frenchman and his crew, took possession of his vessel, and brought her to Bissao, where lay some French trading vessels from Gorée, one of which was immediately dispatched to apprise the French authorities of this criminal outrage. Kyetan did not wait for the storm to burst upon him; he departed for the Sherbro with his merchandise and a part of his household. There his former success in the slave trade again attended him, and during a year's residence in that river he shipped three cargoes of slaves to Cuba, in charge of a confidential agent, which all arrived safely, and realised a large sum, with which the agent, according to instructions, sailed for Lisbon, and on arrival duly apprised his principal of his good fortune. Upon receipt of this favourable news, Kyetan ventured to Cape Verde Islands, whither a French squadron was soon sent to demand him. He insisted that he was entitled to be tried by the tribunals of his own country for an offence committed in one of its own colonies, and demanded to be sent to Lisbon. He was accordingly sent thither in a Portuguese national vessel, and on his arrival found his faithful agent in possession of 2,000 doubloons, the proceeds of the slaves shipped from Sherbro. With such a sum in hand, and his case resting on the decision of the Lisbon tribunals, he had nothing to fear. He was tried and acquitted, and returned to Bissao, with the decoration of, I believe, the order of Christ. He now found that during his absence the legitimate trade had greatly increased, both in value and amount, and some of his countrymen, whom he had left poor, rising in the world by the pursuit of it; and he determined thenceforth to make that commerce his primary, and the slave trade his secondary occupation. From his capital, his astuteness, and great energy of character, and from having obtained the contract for paying and feeding the detachments and the civil functionaries, and farming the duties, he was enabled to monopolise almost the whole of the lucrative traffic of the river Jeba, and he soon became the leading merchant of the place, to whose influence even the governor yielded his authority.

His slave trade adventures, at first successful, became at length the reverse. One vessel after the other was captured, and his losses in this traffic turned the scales against the profits. About this time the British government, Portugal having failed in observing her treaties, passed the Act of Parliament authorising her Majesty's cruisers to seize vessels under Portuguese colours, equipped for the slave trade,

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north or south of the line. The vigilance and activity of the cruisers so hampered the traffic by seizing empty vessels, that the slave-trade of Bissao dwindled away to very trifling adventures to Cape Verde Islands; and upon Portugal concluding the treaty that was required of her, and enjoining on the governors of her possessions the faithful observance of it, the slave trade ceased in Bissao.

Kyetan, by devoting his whole time and energy and means to the pursuit of legitimate commerce, has died wealthy by its lawful gains.

With the property left by Kyetan are about 200 domestic slaves of both sexes, whom he employed about his extensive establishment. During his life-time these people, I am told, had no cause to complain of ill-treatment; but since his death some of his relatives, who only made themselves known to him some months before his death, when it was apparent that he was sinking gradually from the effects of a pulmonary complaint, have lately exercised a most cruel and despotic authority over these people. One of these so-called relatives is described to be a man who is more than suspected of having committed piracies, and all the barbarous and cruel crimes attached to that lawless pursuit. This man (I did not learn his name) has made himself conspicuous for the cruelties exercised towards these unfortunate people.

To escape from cruelties to which they had not been accustomed, and which had become intolerable, several of these unhappy slaves lately seized a large boat belonging to Kyetan's establishment, with the intention of reaching these islands or Sierra Leone. In the hurry and secrecy of their departure they appear to have laid in little, if any, water and provisions, for their voyage of more than two hundred miles; they were, therefore, soon suffering from hunger and thirst; the former privation the African race can endure with more patience than perhaps any other portion of the human race, but under the latter privation they are most impatient. They wished to land at Bulama, to assuage their thirst and appease their hunger; but they dared not set foot on shore there, as they were certain of being recognised by the Bissao people, who are settled on that island, and sent back by them. Thus, on a territory clearly British, which should have proved to these unhappy people an asylum, and instead of its flag of freedom waving to them a welcome, they saw flying the same flag which at Bissao had looked with apathy and indifference to their sufferings. They proceeded onward, with feelings mingled with hope and despair, till they reached the island of Kennebec; here, by the direst necessity, and in expectation of escaping the observation of the natives, they landed, but were unfortunately observed by the inhabitants, who surrounded and seized them, and, with the hope of ample reward, carried them back to Bissao.

I would not, on no better foundation than a passing rumour, attempt to harrow your Excellency's feelings with the description of the fate which befell these unhappy people. My informant is a man of respectability, of veracity and honour, whom I have known as such for some years, and is the confidential agent of a foreign mercantile house of high standing. He has been, with several others, agents of English,

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French, American and Belgian houses, waiting for some weeks past at Bissao, to obtain from the representatives of Kyetan a settlement of the balances due to their principals, and was on the spot when the atrocities he described to me took place.

This being the first attempt of the slaves to escape, and unfortunately an unsuccessful one, it was thought necessary by the inhuman Portuguese to deter, by the torture of these people, others from making an attempt to gain their liberties.

In the first burst of exultation on recovering these poor runaways, the leaders of them were shot dead. Some of the others were taken inside the fort, and lashed to the guns (these guns resting on British ordnance iron carriages, kindly lent by the late Governor Rendall, from St. Mary's, to the authorities at Bissao, when they were at war with the natives, and have never yet been reclaimed), and then flogged so unmercifully that but few of them have survived the frightful punishment. Another horrid act of cruelty, which I never heard of before, was practised on some of these unfortunate slaves. Muskets were loaded with powder and salt, and fired at their naked bodies. This species of cruel torture was, I believe, unknown before in these parts, and is probably practised by the pirates of Cuba to extort confession.

It is with feelings of horror, but under the impulse of duty, and with full confidence in the fidelity and veracity of my informant, that I bring these atrocities to your notice, certain that your Excellency will also bring them under the notice of her Majesty's government, and that her Majesty's principal Secretary of State for Foreign Affairs will call on the government of Portugal to put an end to such barbarities, which disgrace a people professing Christianity, and the recital of which will shock the feelings and rouse the indignation of the humane and benevolent of every country.—*Slave-trade Papers, Class A.*, 1851, pp. 400—404.

BRAZILIAN KIDNAPPING.—A correspondent writes from Rio:—"A short time ago a great number of boys were shipped at Liverpool for Rio, and have now been landed for some time—short, indeed, but sufficient for them to have received most scandalous treatment. They are principally kept in a small fort in the centre of the harbour, known by the name of 'Vilganhon,' at which they are made to break stones, are sent to the beach to collect shells for lime, badly fed, and their pay retained for fear of their desertion. No letters are allowed to be written by them to their friends, and they would be a thousand times better off in any of our convict hulks. Two little fellows the other day, seeing an English naval officer in Mr. ——'s store, ran up to him and related, with tears in their eyes, the treatment they had been subjected to, which, indeed, was such as I find it impossible to put in writing. These two little boys begged this officer to take them on board the English admiral's ship (the elder was not 12). He could not, however, interfere, for they were summoned down to their boat, where they were kicked and knocked about in a manner that makes an Englishman's blood boil to think of. (This I have been a witness frequently to). Fellow-countrymen, I beg and pray of you, no matter what the extremity may be you are driven to, keep your children from the hands of the Brazilians! Imagine an Englishman treated as a slave, and worse, by a Brazilian!"

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The Lobos Islands.

Sir,—The Lobos Islands have lately occupied attention through *The Times* and doubts have arisen as to their rightful sovereignty, or whether the Peruvian government was even aware of their existence as guano islands until Mr. Wentworth Buller had made the imaginary discovery by reading Captain Morell's voyages last year. I beg to trouble you with the following statement: Having navigated the first steam vessel to that coast in 1840, and continued running backwards and forwards along the west coast of South America, from Panama to Chiloe, for a period of six subsequent years, I had frequent opportunities of examining different islands, and of ascertaining that deposits of guano existed on the coast of Peru, which were not then known to the government, nor until I laid before them in 1845 plans and estimates of ten new deposits which I had drawn up from time to time during the four previous years, including the Lobos and Guanape Islands (pronounced Wanyappy), and although the government did not consider it necessary to allow these deposits to be worked, there being by my estimate 50,000,000 tons upon the Chincha group alone, (*vide* my report published in the *Nautical Magazine* for March, 1847,) they were nevertheless officially surveyed shortly after my plans were sent in, during the early part of 1846, and I am still in correspondence with the Peruvian government upon the subject.

With respect to the right of that government to seize and confiscate any vessels attempting to load guano upon these islands, or even to anchor there without a licence, a case in point has already been established in 1843, when, during the temporary suspension of the shipment of guano to England, an English bark, I think her name was the *Vitula*, proceeded to the Chinchas, from Valparaiso, and began loading without a licence. The captain of the port of Pisco, 11 miles distant, within whose jurisdiction these islands lie, proceeded in an armed boat and took possession of her; she was taken to Callao, confiscated, and sold as a lawful prize, and is now running with another name under the Peruvian flag. The crew were imprisoned in the dungeons of the castle at Callao, but afterwards liberated at the instance of H.M. minister at Lima. Another British ship also made the attempt (the *Prince of Wales*), but escaped before the boat could reach her. Another case occurred at the Lobos de Afuera Islands, either in the same year or in 1844. A schooner from Lambayeque had been wrecked on these islets, having a quantity of specie on board. The captain of an English brig, I believe her name was the *Harpooner*, having a diving apparatus on board, from Panama, hearing of the wreck, and hoping to obtain some of the specie, proceeded to the spot without a licence, anchored and commenced operations; the captain of the port of Lambayeque, under whose jurisdiction these islets lie, proceeded in an armed boat, seized her, and brought her into that port, and after considerable delay, and the interference of H.M. minister at Lima, the vessel was at length released by the payment of a heavy fine. It appears to me that to question the validity of the Peruvians to claim all islets lying contiguous to their own coast, whether inhabited or otherwise, would be equally applicable to many of the islets lying off the coasts of Great Britain and Ireland, although I do not think we should admit any doubt of their sovereignty, if attempted to be exercised by any foreign power.

"The Lobos de Afuera (Outer Seal Islands) are only 11 leagues from the mainland, and the Lobos Atierra only 10 miles; they are under the jurisdiction of the Captain of the Port of Lambayeque, in the department of Libertad. The Guanape Islands are six miles from the mainland, under the jurisdiction of the Captain of the Port of Huanchaco, in the province of Truxillo. The following is a description of these islands, as copied from my remark-book:—

The Lobos, or Seal Islands, under the jurisdiction of the Port of Lambayeque, are three in number; they abound in seals, and are covered with guano in the

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sheltered parts. The Indians visit them occasionally to kill seals, coming from Lambayeque in large balsas (rafts of light timber with a raised platform, and carrying an immense lug sail) for this purpose. The northernmost, or Lobos Atierra, is the largest island, being five miles long and two broad in the broadest part. The principal deposits of guano are on the north-east side, where there is good anchorage in six fathoms. My estimate of the quantity of available birds' guano upon this island was 2,000,000 tons. The nearest point of the mainland to it is ten miles. Latitude of the anchorage, 6° 25′ S.; longitude 80° 52′ W.—S.S.E. ten leagues from this island are the Lobos de Afuera, consisting of two islets, separated by a narrow channel, about a cable's length wide, the shore of the north island in the channel forming a steep precipitous cliff. The largest island is about two miles long by three-quarters of a mile broad, lying S.E. and N.W.; the other lies nearly north and south, forming with the southern island two snug capacious bays; this island is about a mile and a-half long, and nearly a mile broad. There is a good anchorage on either side of the narrow channel, but the best is in the east bay off the north-east part of the southernmost island, where also most guano abounds; there you may lie in eight fathoms close in, and there is room for a fleet of vessels to load at the same time, the water being smooth, and the shore nearly always accessible; there are several places in both bays where vessels could at times load by a hoze or shoot, the same as at the Chinchas.

There appears to be a good deal of seals' dung mixed with the birds' guano, particularly in the lowest part of the coast; but it is easily distinguished by the colour, and there is no lack of the real birds' guano. It is difficult from eye-survey to form an estimate of the quantity upon these islands, as the surface is rugged, and without boring you cannot arrive at a just conclusion as to the depth of the guano in the valleys or ravines; but, at a rough computation, the available quantity may be taken at from 2,000,000 to 3,000,000 tons. The nearest point of the mainland from the Lobos de Afuera is 11 leagues, and they lie 15 leagues W.S.W. from Lambayeque—latitude of the anchorage 6° 57′; longitude 80° 44′ W.

The Guanape Islands are two in number, lying six miles from the mainland, in latitude 8° 33′ S., and longitude 78° 59′ W.; they are under the jurisdiction of the Port of Huanchaco, in the province of Truxillo. The southernmost is shaped like a wedge, or gunner's quoin, and is high and precipitous on its south-west side; it is covered with birds' guano. The northernmost island is sloping, and has a good bay on its eastern or lowest side, with plenty of water close to the steep rocks, on which the guano abounds, and there is a natural bollard on the north side of the little bay, shaped like an anvil, to which the ship can make her stern moorings fast. There are two natural shoots running directly into the sea, and an ordinary ship's crew might load their vessel of 300 tons in a couple of days, the guano being deep and of excellent quality. I should think from 25,000 to 30,000 tons could thus be shipped. There was a heavy swell on outside the island when I visited there, but I had no difficulty in landing, and I think there are few days in any month that vessels could not load from a hoze or shoot, and at which time boats could always load from a projecting stage slung from the natural shoots. There is only room for two vessels to lie alongside the low cliff at a time, but by using launches or boats a dozen ships could be loading together. I believe no one had ever visited these islands before I did.

I am, Sir, your obedient servant,

C. Peacock,

Superintendent and Dockmaster of the Southampton Docks, formerly Marine Superintendent of the Pacific Steam Company, in the Pacific.

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Execution of Pirates.

In our June No. we gave a detailed account of the capture of a nest of Pirates by H.M.S. *Virago*. They were taken to Valparaiso, and have been since tried and executed.

The accused were ten in number; but only seven were sentenced to death. Belonging to the Army, they were tried by a Court-Martial, and Cambiaso (Lieutenant in the Garrison stationed in the Straits, and chief leader in the rebellion) was convicted of heading the insurrection, which took place on the 29th of November last, and of taking the Government of the Straits into his own hands; of having ordered the assassination of Gonzalez, a convict, and formerly a Serjeant in the Army, for the offence of receiving a bottle of brandy given him by Captain Salas, prisoner of Cambiaso's; of having made his followers swear fidelity to a red flag, with a skull and crossbones, with the motto, "I give no quarter"—a fitting symbol of his ferocity; of having seized the vessels *Florida* and *Eliza*, which anchored in the Straits; of having ordered the assassination of the masters of said vessels, and passengers; of one Riquelme, supposed to be in communication with some fugitives; of Post-Captain Don Benjamin Munoz Gamero, Governor of the colony; of the clergyman Acuna; of four Indians, natives of the Straits; and of ordering all the bodies, excepting those of three Indians, Gonzalez, and the clergyman, to be burnt, while the national hymn was sung around the funeral pyre. He and his accomplices were also convicted of burning the hospital and the sacred vases; and, after quitting the colony, leaving from 40 to 50 men abandoned in Port Solana, where they would inevitably have died of hunger had they not been relieved by the steamer *Virago*. Being convicted of these crimes by a Court-Martial, he was sentenced to be degraded and shot, and his body to be afterwards cut in pieces. On arriving at the place of execution, Cambiaso begged leave to address the people. He spoke with self-possession, and confessed himself guilty of all the crimes imputed to him, and worthy of the fate he underwent. He said the same of his accomplices who shared his fate.

Six others, viz.—Ensign Villegas, and the convict Serjeant Jimenez, Aristegni, Briones, Captain Riquelme, and the sailor Jose Tapia, convicted of aiding and abetting Cambiaso in his murderous designs, were also sentenced to be shot.

The other three persons were acquitted, on the ground of being forced to follow Cambiaso in order to save their lives, and also for having planned and effected the counter revolution on board the *Florida*.

Cambiaso was about 25 or 26 years of age. His personal appearance did not reflect the bloody laws of his penal code. His forehead was open, his complexion fair, his hair dark and profuse. He had a fine aquiline nose, and red lips adorned with an ample moustache. His face was almost covered with beard. His stature was of the middle size, and more thin than stout. But his eyes revealed the secrets of his heart, and told what nature hid under the beauty of his person. He could never meet any one's gaze with a frank and open look. His eyes were viewless by his eyelashes, from underneath which he cast covert and piercing glances, like those of a bird of prey. He appeared fearful of fixing his gaze, lest he should reveal his secret thoughts.

Captain Lawson.—Amongst the items of the Chinese news received by the overland mail, mention is made of the trial of twelve men of the late ship *Herald*, for the murder of Captain Lawson and others on board in the Straits of Anjeer. Ten of them were found guilty and condemned to death. The particulars are related in our May number, p. 232.

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NAUTICAL NOTICES.

To the Editors of the Sydney Morning Herald.

Gentlemen,—Having received a letter from a passenger in the ship *Gambia*, which left Sydney last August, for Calcutta, describing her passage through Torres Strait, by Blighs entrance passage, which was recently followed by the *Caldew*, in the westerly monsoon, an account of which you have recently given to the public, I think that its publication would be most useful, to induce ships going through the Strait to use it in preference to those anxious and most dangerous passages through the Barrier Reef. The *Gambia* having made the passage from Sydney to Booby Island in twelve days, and anchoring (and that not necessarily) for only one night, is a sufficient proof of the great importance of making it as widely known as possible.

As Mr. Mackenzie is an old seaman, and a talented navigator, every confidence ought to be placed in the opinion he has tendered as to the importance of the route followed by the *Gambia*,

I remain, Gentlemen,
Your obedient servant,
PHILIP P. KING, Capt. R.N.

P.S.—I have sent the chart, on which the *Gambia's* track is laid down, to Mr. Ford the bookseller, George street, who will be most happy to show it to any person inquiring for it.

Ship *Gambia*, off the Sand Heads,
October 1st, 1851.

My Dear Sir,—I trust the accompanying track and remarks during the *Gambia's* quick and successful passage through Torres Strait to Booby Island, in twelve days from Port Jackson, may not be unwelcome or useless, to one who feels so much interest in Australian navigation, and to whom navigators there and elsewhere are so much indebted. I have the *Nautical Magazine*, from the commencement in 1832, with the exception of the last seven numbers for 1849, and the four first for this year. These, however, I found time to look through in the library when in Sydney, for anything new there might have been relative to Torres Strait. By that work I do not see that you have at all advocated the passage by Blighs Entrance since its survey, in *that* work, nor am I aware of your having done so in the *Sydney Morning Herald*. In this there is nothing surprising, considering the prejudice and obstinacy with which five-sixths of the navigators risked their ships and insurance, in spite of the trouble you took in pointing out the advantages of the Inner Route. The only argument of any weight in favour of the outer route was, the saving of time, and this was to be considered in comparison with the risk incurred. The most absurd was, the nightly anchoring in the Inner Passage with small crews. Now, heaving up an anchor and making sail early in the morning, trimming sails if required during the day, clewing up and giving a ship cable, perhaps not furling sails, is surely no hard day's work, if all the previous evening and night has been passed in bed, with the exception of keeping a two hours anchor watch; and if a man is paid and rationed for a fair day's work, he may as well do it when required, especially as in the present case there is nothing to weary, exhaust, or harass him.

Captain Anderson, being quite a stranger to Australia and its navigation, supplied himself in London with the latest charts, and was much struck with the advantages of the Blighs entrance route when studying the chart of it. He had not, however, seen Captain Blackwood's directions, which my copy from the Harbour-master's office and the *Nautical Magazine* supplied him with. He was surprised to find in Sydney, Steads passage the favourite one, and the only objection to the other was, that the wind might get scant. He

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did not make up his mind until we were in the position for steering for Osprey Reef, when, as there was a heavy sea on, with a strong trade, and hazy weather, we steered for midway between the Eastern Fields and the coast of New Guinea; and it is not unlikely that the *Gambia* is the first vessel that has tried that route. After we got through, I showed Captain A. all the accounts of passages and wrecks in the *Nautical Magazine*, and we agree that no one is justified, to owners or insurers, in taking any route but your inner one, or the northern.

He intends writing to the *Nautical Magazine*, to Captain Blackwood, and his insurance brokers on the subject. A man-of-war would have made the passage in a day less, as we never once set a studding sail until past Booby Island, nor crossed fore or mizen royal yards. In fifteen days from Sydney we were in 134° E., but there our good fortune left us, as we did not reach Rotti until the 3rd, Christmas Island 10th, and crossed the equator in 90° 40′ E. on the night of the 18th September.

I remain, very truly yours,
WILLIAM MACKENZIE,

Captain P. P. King, R.N.

REMARKS ON BOARD THE SHIP "GAMBIA," CAPTAIN HUGH ANDERSON, FROM SYDNEY TO CALCUTTA VIA TORRES STRAIT.—*By W. Mackenzie, Esq., a passenger.*

The charts on board the ship were as follows:—

No. 1. Chart of Terra Australis, 1814 to 1843, and corrected to 1849.

No. 2. Captain Blackwood's Charts of 1844, with the survey of Bligh's Entrance Passage.

No. 3. The *last* on a large scale, of 1847, apparently corrected by Captain Owen Stanley, R.N., including Endeavour Strait, and channels north of it.

At sunset, August 9, 1851, weighed from Farm Cove, and at 7h. 30m. cleared the Heads; steered to sight Bird Islet, but this could not be done in daylight. At noon, 13th, we were in lat. 24° S., long. 155° 50′ E.; steered north (true) to pass, during the night, between Cato's Bank and Australia's Reef, so as to sight Kenns Reef for a fresh departure. At noon, 14th, in 21° 12′ S., 155° 53′ E., being three miles south and four miles east of its position, yet, although the course was altered to N.N.W. as soon as the latitude was obtained, and it was a remarkably fine and clear day, nothing was visible from the mast head. Six days afterwards we found the chronometers to agree exactly with No. 2 chart; but there is a difference of longitude between 2 and 3 of seven and a quarter miles, which has not been applied to the positions of the islets and reefs in No. 1. Had this been applied we should have been 3¼ miles west of the shoal, which, however, is most likely laid down east of its true position—at least from the account of the losses of the *Jenny Lind* and *Bonavista*, it would seem so, in the absence of any account of its position having been determined by a man-of-war en route to India, or a surveying vessel.*

August 19, 4h. 45m. P.M., made from the mast head the breakers on the north end of Portlocks Reef, S. by E. At 6h. 30m., hauled to the wind under easy sail, allowing for a set of two miles per hour to the west, and keeping between the latitudes of Bramble Key and half way between it and

* The only published notice of Kenns Reef is from the account of its discoverer, Mr Alexander Kenn, master of the ship *William Shand*. "It extends in the direction of N.W.b.N.½N. for 10 miles, and is composed of sand and rocks, some of which, at the south end, were six or eight feet out of water. It is six miles broad. The centre of the edge is in latitude 21° 9′, and longitude 155° 49′, by chronometer and lunars."

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Anchor Key by mean of meridional altitudes of stars and sounding occasionally. At 3h. A.M., having had a cast of 55 fathoms, coral and shells, and ascertained our position by a meridional altitude of the moon, and longitude by chronometer by stars, bore up under easy sail. August 20,—at 6h. A.M., rocks on the east Key were seen from the mast head; at 6h. 20m. they bore south true, and we saw Anchor Key, on which there was not the smallest breaker either near or on it; at 7h. 15m. the Key bore south (true), when sights were taken for the chronometer, as above mentioned. It must be here remarked, that, besides the difference of longitude of 7¼ miles between charts 2 and 3, in the small *corrected* pamphlet of instructions, by Captain Blackwood, sold at the Harbour-masters Office, in Sydney, the north extreme of Portlocks Reef, is stated to be in 144° 57′ E., and Anchor Key 33 miles west of it: this would place the latter in 144° 24′ instead of 144° 10′. In No. 2 chart is the same error, 144° 49′ less 33′ equal to 144° 16′ E., instead of 144° 3′, for Anchor Key. All this is the more puzzling in the absence not only of any information as to the causes of such a difference between two vessels fitted expressly for surveying, but of any statement as to what meridian they are depending on, no account having ever been published in the *Nautical Magazine* of any error having been found in Captain King's position of Sydney Light-house. It is also right to state here that on the *Gambia's* arrival in Sydney, June 15, the chronometer was found without error. July 24, by comparison for Greenwich time, by means of a pocket watch, with Dawson, it was found 1½′ to the westward; and, on the 6th of August, by taking it on board H.M.S. *Havannah*, 3′ to the west. Captain Anderson determined on adhering to the London rates and error, which agreed exactly at Anchor Key as on No. 2 chart, and afterwards with the west point of Pulo Dana and Christmas Island, as near as their positions could be ascertained on a chart on so small a scale as No. 1.

We proceeded through the Strait by Captain Blackwood's directions, passing 3 miles north of Anchor Key, and 4 miles north of the reef, a wash at low water, N.N.E. of Darnley Island, on which were breakers, and had Stephens Island south at noon. The wind was fresh and steady, yet, with a very hazy horizon, and we did not see Bramble Key, nor Darnley Island until it bore south. Passing close to the westward of Rennells Island, and seeing natives on it, as well as on Stephens and Campbell Islands, Captain Anderson considered it would be more prudent to anchor for the night under the lee of Arden Island (which from its small size was not likely to be inhabited) than at the island on which was a village, or at Cocoanut Island, on which there was likely to be one also. This was accordingly done at 4h. 20m. P.M., in 13 fathoms; landed and walked round the island, finding traces of fires and remains of fish, with twigs rigged gridiron fashion over the fires. By 7 A.M., we were again underway, with the same wind and weather. Passed between Dove and Cocoanut Islands, also between the grassy sandbank and Cocoanut Island, and the Poll Rock (? the southernmost of the Three Sisters) and sandbank south of it. In this last channel we saw (south of our position and north of the sandbank) some discoloured patches, indicating less water. They were of a purple colour and there were no clouds overhead to throw a reflection, yet they were not reported from aloft and cannot be dangerous. We passed three miles south of Harveys Rocks and between Double and Monday Islands. The latter in the latest (No. 3) chart is not only marked, but named, Monday Bank, we were surprised then to find a rocky islet. The red rocks 40 feet high and covered with verdure, with some trees on the west end full 30 feet high. Passing through Prince of Wales channel, we cleared it, the west end of Goode Island S. by E., to west end of D reef N.b.W., at 5h. 10m. P.M., being 34h. 50m. from east Key (bearing south) and deducting 14h. 40m. at anchor, we were only 20h. 10m. under way through Torres Straits. We an-

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chored at Booby Island at 7h. 30m. exactly twelve days from Sydney Heads. Before we reached the rock off Hammond Island, we distinctly saw the rocks on the reef next to Goode Island, which serve to buoy the channel. The caution given by Captain Montague of H.M.S. *Crocodile*, in his letter to Captain P. P. King, R.N., relative to reef D, is most important. Although more than three quarter ebb, and the N.W. reef was dry, D reef was barely made out from aloft, but no trace could be seen from the poop, although the eye was 26 feet high. In passing it we saw the White Rocks quite distinctly, they seem as if always above water, yet, although named, they are not only not marked so, but one fathom is laid down as the least water over them, an oversight, doubtless, in engraving the plate. This (Prince of Wales) channel seems at all times preferable to Endeavour Strait, it being well buoyed, marked, clear of sunken rocks, and with moderate depths to anchor in at any time or spot, whilst the four sunken rocks discovered in Endeavour Strait, as well as the one found between Entrance and Little Woody Islands since the last careful examination by H.M.S. *Rattlesnake*, renders it anything but a safe navigation, and for the above discoveries need not to be used during the night.

The only risk I can perceive in the adoption of the passage we have made by Blighs entrance, may be from the natives, and all the sound arguments advanced by Captain King, in favour of the inner route are not only applicable to it, but those in favour of the outer route as well. The eastern fields coast of New Guinea, with Portlocks and other reefs, prevent any sea from getting up as prevails outside the barrier, a proof of which is given above in the fact of Anchor Key being without a ripple, whilst we had the south-east trade, and monsoon strong. We could not help contrasting our position during the night of the 19th, with what it would have been outside the barrier, with the sea running, which we experienced in the parallels of the old passages, south and north of Raines Island. In our case we had soundings to guide us and no risk or cause for anxiety. The distance through the Strait from east to west (east Key to Booby Island) is less after entering than any other route. The sun never shines ahead to dazzle the eyes—no higher course than S.S.W. is required, and even should the wind become scant, there is not only ample room to work, but in the event of very thick and squally weather occurring, plenty of anchorages at any time in moderate depths. Once N.N.E. of Darnley Island there is no risk in keeping under sail in a clear night, or at any rate in a moonlight night as far as Wednesday Island. Another advantage of this route is, that once these charts, 2 and 3, with their directions are placed before Insurance Companies or private Underwriters, there would be an end to the two per cent. extra premium for going through Torres Straits. As far as we know, the *Gambia* is the first merchant ship that has made the passage; at any rate no account has been published in the *Nautical Magazine*, up to 1851. One would suppose after reading Captain Blackwood's account of this passage in the *Nautical Magazine*, and a sight of his chart, that it would at once, during the easterly monsoon, supersede every other route for merchant ships, were it not that constantly each season we see the effect of old prejudices, which lead parties (risking, we conceive, thereby their insurance) to prefer Steads and other passages to that of Raines Island, *after* the erection of the Beacon, and the publication of the charts and directions, from which period no one could be justified in adopting any other than Captain King's inner route for it. In the westerly monsoon, by the *Rattlesnake's* late surveys, vessels would be enabled to take this passage and run down their casting to a position enabling them to enter and cross the S.E. trade to advantage.

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Sailing Directions for entering the Ports of Tahiti and Morea.

(Continued from page 506.)

Point Venus. The bay of Point Venus is exposed to the westerly and northerly winds. The anchorage is sufficiently safe, excepting in the months of December, January, February, and March. In entering the bay, haul close round the reef on the east side, passing in between the reef and the Dolphin bank. Anchorage under the Point, about two cables' length from the shore.

Papaoa is on the N.W. side, and about three miles to the southward of Point Venus; it has good anchorage. There are, however, several sunken shoals inside the passage, which pass outside of, keeping along the outer bank. The best anchorage is at the head of the bay.

It would not be prudent for ships running to the westward along the north side of Tahiti, more particularly large vessels to approach the land closer than 3½ miles, as there are sunken shoals lying off in different places. These shoals commence at Mahaena, extending to the westward as far as a small island that lies a little to the eastward of Point Venus.

Vessels bound to Papeete, if there should be any southing in the wind, must bear in mind that the breeze will not reach the passage; sometimes only as far as Point Venus; other times it will reach to Taaone; and in some particular cases close to Papeete, but never as far as the passage. When you get in shore off Papeete, there will be an eddy wind from the southward and westward, in such cases it will be well to keep off shore in the line of the sea breeze. When Papeete passage bears S.E., haul in shore gradually into the calm or variable winds, which is always the case between the two winds. In most cases, after a little time you will have a S.W. or westerly light breeze, which will gradually increase as you near the passage, for the closer in the stronger the eddy wind; you will often find twice the wind inside the reef that there is outside.

At times vessels coming down from the eastward, after passing Point Venus, are left suddenly in calms, or with light variable winds, the sea breeze hauling off; in that case it is advisable to keep in shore if possible, making short tacks for the harbour, as the eddy wind before-mentioned is stronger close in when placed between the two winds, as a vessel may be becalmed a whole day, with no chance of getting into port; at times the easterly wind will carry a vessel to the harbour's mouth, when inside the wind is the contrary way: when this is the case, you can make bold to stand in, keeping as close to the southern bar as is prudent, standing by to brace round the yards as soon as you feel the air. In standing in with a good breeze, if the wind should leave you in the passage, and it should be calm inside, the way the ship has will carry her either to her anchorage or within reach of the buoy, enabling her to swing clear of all danger. The buoy has been placed for the purpose of running a line to haul up to, and so prevent the necessity of dropping an anchor. It would be well to have a good line or hawser ready in case it might be needed. In all cases the state of the passage with regard to the current and sea must be considered before attempting to enter; but this can be observed as you approach; the current sets down inside the reef from the southward towards the Island Motuuta, and the reefs on the larboard hand entering. From the eastern side of the outer reef, the current strikes to the S.W., pressing down to the lee bar of the western side and along the reef. It is necessary when there is any current to keep close to the eastern reef, to avoid the bar; in fine weather it is deceiving, as the passage appears wide; but in heavy weather

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the sea breaks on it, leaving in many places only from 1½ to 2 fathoms water. Close to the eastern reef, there is a small sunken shoal in the mouth of the passage, but as there are three fathoms water on it, it is only to be feared by large ships. In the months of January, February, and March, the passage of Papeete is in general bad, with a high sea and strong current, during which time vessels have to enter by the Taunoa passage. Vessels wanting a pilot will do well to wait off Taunoa passage, as he can then bring them in by either of the passages as his judgment may dictate to him. Moreover, as the current generally sets to the southward between Tahiti and Moorea, ships getting to leeward may have some difficulty in working up.

For ships going between Tahiti and Moorea, bound to Taravao, Taiarapu, &c., a northerly wind is a fair one through; with an easterly wind it will be necessary to keep well on the Moorean side, in order to profit by the breeze as long as possible, passing three or four miles from the S.E. point of Moorea, and then gradually hauling to the eastward; after losing the easterly wind it is probable that you may have a southerly breeze, which will enable you to head to the eastward; towards night it will be necessary to haul in with the Tahiti shore, to profit by the land breeze, that in most cases will carry you past Maraa into the sea breeze; every advantage must be taken of the land breeze, as often in the day time you may lay becalmed between the two breezes. After having passed Maraa, and working up to windward for Taravao, it will be well to keep an offing towards the morning, for although the breeze still keeps up in shore, it is much influenced by the land breeze; about 10 o'clock the sea breeze comes in true, often from the southward and eastward, which will give you a bold reach up for Taravao.

Ships leaving Papeete, bound to the southward for Valparaiso, &c., should, in almost every case, go to the westward of Moorea, passing the lee point of Moorea six or eight miles.

Sailing from Taravao, bound to Papeete, with a fair wind, steer W.S.W. until you open the south part of Moorea with Maraa point, then steer west till the north end of Moorea is open with Maraa, changing the course to W. N.W., which will enable you to pass the reef off Maraa two or three miles distant. When the extreme point of Bunaauïa is open with Maraa, bearing N.N.W.¼W., the extremity of Maraa reef will bear N.W.¼N.; north end of Moorea, N.W.½N.; then steer N.W.b.W. until you have passed abreast of Maraa, having the channel well open; then change the course to N.W.b.N.½N., which will carry you between the islands clear of every thing, as the current sets generally on the Faaa reef, called the Rapa Tiaini, it would be well not to haul in too soon for Papeete, not until yon are abreast of Faaa reef, as frequently the S.E. wind will carry you that point and leave you in a calm, with perhaps a heavy swell from the southward or northward, together with a current setting towards the reef; likewise with S.E. winds it is often the case that when the wind leaves you, in calm, it is followed by a light air from the northward and westward, so that it is an advantage to have a little offing to fetch Papeete.

Leaving Taravao, with the wind blowing over the isthmus from the eastward, it will be necessary to keep well off the point of Maraa, well over to the Moorean shore; for under the Tahiti shore there will be light and variable winds; haul gradually to the northward, and, as you lose the breeze, it is probable that you will have a light eddy wind that will enable you to lay well up on the larboard tack.

From June to November the southern part of Tahiti is frequently subject to high sea and strong current, and the sea is heavy on the reef from the Rapa Tiani at Faaa, round the south part of the island as far as Hotopu on the S.E. part of Taiarapu. From December to May the high sea and current is experienced on the northern part of the island from Hotopu to the Rapa Tiaini.

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In stormy winds there is a strong current off the east end of Taiarapu; in southerly winds the current sets to the S.E., and in northerly winds to the N.E. Along the northern side of Tahiti, the current generally sets to the northward and westward, on the south side to the S.E. In westerly winds the current frequently sets the contrary way. On the west side of Papeete, and between the islands, the current generally sets to the southward, between Tahiti and Moorea, particularly in strong southerly winds; with northerly winds the current sets to the northward.

In the island of Moorea there are four good harbours: namely, Taareu at Papetoai; Cooks Harbour at Paopao; Papeare and Haumi.

Papetoai is the best harbour, and is situated on N.W. side of Moorea; it has a wide entrance and extensive anchorage. There is but little current; what there is sets to the westward along the reef. Vessels entering or coming out must keep on the eastern side of the passage.

Paopao, about three miles to the eastward of Papetoai, has a good harbour; the best anchorage is at the head of the bay.

Papeare, is on the N.E. part of the island; it has a good entrance, with safe anchorage at the head of the bay.

Haumi is on the east side; the passage is narrow, but good, with plenty of water. After entering the reef, anchorage can be had either to the northward or the southward.

Trinity-House, London, 27th, July, 1852.

DANGER PATCH OFF FLEETWOOD.—Notice is hereby given, that this Corporation has caused a Buoy painted "Black," and surmounted by a Staff and Ball, to be placed on a shoal Spot off the entrance to Fleetwood Harbour, on the Coast of Lancashire, called "Danger Patch," with the following Marks and Compass Bearings, viz.:—

Fleetwood Church Spire, on with Mount Pleasant S.E ¼S. Thornton Mill, just open to the westward of the houses at Larkham S.b.E.¼E.

Mariners are reqested to observe that at Low Water Spring Tides there is no more than 6 feet water on this Patch, and that it is advisable that at all times vessels should pass to the westward of the Buoy.

27th August, 1852.

BOMBAY HARBOUR.—Adverting to the Notification issued from the Commodore's Office, Bombay, under date 19th May, 1852, in relation to the completion of a New Beacon on Kenery Island, at the entrance of Bombay Harbour; which Notification was printed by order of this Board and circulated under date the 5th instant, Notice is hereby given, that a communication has been this day made to this Corporation by order of the Court of Directors of the East India Company, that, in order to prevent its being mistaken for the Light House, in hazy weather, the said Beacon has been removed.

1*st September*, 1852.

SOUTH FORELAND HIGH LIGHT.—This Corporation having, with a view to promote the safety of Vessels when navigating by Night in the vicinity of Folkstone, recently caused examination to be made of the rocky patches which extend from the shore at Copt Point; and having ascertained that additional facility for navigating that part of the Channel, will be afforded by decreasing the Range of the South Foreland High Light to the Northward, Notice is hereby given, that on and after the 1st of October next, the Light from the said High Light House will not be visible to the Northward of the Line of Bearing of W.b.S. Southerly.

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Masters of Vessels drawing more than 14 feet water should adhere to the old rule, which requires that the Lower Light shall be kept in sight when approaching the shore; and masters and pilots of all vessels not bound to Folkstone Harbour are now instructed to stand off immediately the High Light disappears.

By Order, J. HERBERT, *Secretary*.

AUSTRALIAN NAVIGATION. GULF OF ST. VINCENT.

TROUBRIDGE SHOAL.—To avoid Troubridge Shoal when sailing through Investigator Strait from the westward, run well to the eastward between Point Marsden and Cape Jarvis before running up the Gulf, as the flood tide sets strong upon the Shoal. High water 3h. 30m. full and change of the moon.

PORT ADELAIDE.—Running up to Port Adelaide, after passing the high coast land, be careful of soundings, keep between five and six fathoms. A Light-vessel, having two lights, one on the foremast and one on the mainmast, is moored off the entrance of the harbour, in lat. 34° 44′ S., one mile S.W. from the bar. High water 5h. full and change.

PORT WAKEFIELD.—Ships bound for Port Wakefield, to avoid a Shoal which lies between the lats. 34° 45′ and 34° 50′ S., and seven miles from the western shore, should make the Light-vessel; when abreast of her, steer N.W., or N.W.b.W., as the tide may be, to clear the eastern flat; soundings must be carefully attended to. The western shore is bold above the light, and may be approached at any reasonable distance. When opposite Sandy Point the water will shoal gradually upwards, when you may anchor in three fathoms soft muddy bottom. High water 6h. full and change.

(Signed) THOMAS LIPSOM, Commander, R.N.

13th March, 1852.

LIGHT ON SEIERO ISLAND, AT THE NORTHERN ENTRANCE OF THE GREAT BELT.—Her Majesty's Government has been officially informed that a revolving light is to be this day established on the N.W. extremity of Seiero island, at the northern entrance of the Great Belt. The light-tower is 51 feet high; but, as it stands on elevated ground, the light will appear at an elevation of 103 feet above the level of the sea, and will be visible from all directions (to a distance of about 17 miles) once in every two minutes, continuing so during an interval of twelve to fifteen seconds. The building stands in lat. 55° 55′ 10″ N., and long. 11° 5′ 9″ E.

NOTICE TO MARINERS.—Respecting the non existence of a light on the island of Moro, entrance of Santa Martha, as represented in certain charts—Admiralty, Sept. 14, 1852.—Sir,—I am commanded by my Lords Commissioners of the Admiralty to transmit to you, herewith, the enclosed copy of a letter from H.M. Vice-Consul at Santa Martha, respecting an error in a chart published by Mr. Imray, in which it is stated that a light exists on the island of Moro, and as my lords are of opinion that publicity alone affords at present the only remedy for this evil, I am to request that a copy of the vice-consul's letter may be published for general information of ship-owners, who will find that no such information as Mr. Imray represents is contained in the Admiralty Charts. —W. A. B. HAMILTON.—To Captain G. A. Halsted, R.N., Sec., Lloyd's.—British Vice-Consulate, Santa Martha, Aug. 6, 1852.—"My Lords,—The master of the British merchant ship *Regina*, who entered this port on the 25th ult. from Liverpool, having reported to me that he made the port early on the night of the 24th, with the intention of entering, but not finding a light on the

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little island called the Moro, at the entrance of the harbour, as indicated on his chart, he put to sea again. As no such light exists, I think it possible that the error in this chart might occasion some accident by misleading other masters of British ships navigating to this port, and therefore consider it my duty to report the circumstance for the information of your lordships. The chart in question is entitled 'Chart of the Coast of Colombia and the Carribean Sea, drawn from the Surveys made by Commanders R. Owen and E. Barnett, of the Royal Navy. Published by James Imray, Chart and Nautical Bookseller, 102, Minories, 1852.' And in the book of instructions sold with the chart, it is stated that the chart is corrected from the Admiralty chart, 1851.—BENTINCK W. DOYLE, H.M. Vice-Consul, Santa Martha.—To the Lords Commissioners of the Admiralty."

EDWARDS' PRESERVED POTATO.—Referring to the evidence given before the select committee, by high naval and other authorities, we are much gratified to find Edwards' Preserved Potato so highly spoken of, as of "great importance to the men when on salt meat rations." On reference to the Patentee's advertisement, letters from various naval officers will be found, which testify to the estimable properties of this vegetable as an anti-scorbutic diet in all climates, and therefore invaluable with salt provisions.

DEPARTURE OF THE FORERUNNER.

A Liverpool correspondent says:—This beautiful steam-ship, the launch of which we announced from Mr. Laird's yard a short time ago, as the pioneer or *Forerunner* of a line of steamers for the Royal African Mail Company, to carry monthly mails between this country and the west coast of Africa, with various ports of call on the way, and other ramifications in Africa, took her departure on Saturday morning last for London. This vessel is the latest production of Mr. John Laird, of Birkenhead, and she attracted universal admiration whilst she lay a tide or two in the Mersey, from her great beauty and rakish appearance.

The dimensions of the *Forerunner* are as follows:

Length	160 feet
Beam	22 feet
Tonnage about	400 tons

She is constructed of great strength, and very fine lines, with considerable rise of floor, and the bottom is so formed as to give a free access for the water to the screw propeller. She divides the water easily, carrying no head, and scarce making a ripple forward and none aft, the water passing away level, without showing any of the following wave, so common in screw vessels.

The *Forerunner* had on board coals, to put her down to the load draft for which she was constructed, and all her water, provisions, stores, &c., so her performance on Saturday may be considered a very fair index of her minimum speed, as she will of course lighten as she consumes her fuel, water, &c., and increase her speed. The strength of the *Forerunner* was tested by laying her on the gridiron (to put on Griffith's screw propeller) with a full load on board, and with water in the boilers—a more severe trial than putting her into the graving dock or on a patent slip, as the bilges were left (particularly in a sharp vessel like her) overhanging without any support, but on an examination inside and out, she did not show the slightest strain either to the iron or wood work.

The cabins of the *Forerunner* are on deck, and most comfortably and neatly fitted up, with a view more especially to thorough ventilation, each state room having two side lights, and every comfort that her proposed station requires. There is also a forecabin and forecastle, and excellent accommodation for officers and engineers. There are two holds for cargo, one forward and the other

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aft, and she carries about 15 days' coal in her coal-bunkers, which are principally just before the midship part of the vessel, so as to admit of her (as the coals are consumed) lightening more forward than aft, with a view of keeping the screw properly immersed. She is rigged as a three-masted schooner, having very tall masts, and the sails laced to the booms, as in the yacht *America*. The engines of the *Forerunner* are a pair of nominal 25-horse, or collective power of 50-horse, but in reality work to a considerably greater power; are of Fawcett, Preston, and Co.'s make, and do them great credit in design and workmanship.

The *Forerunner* was first tried with a common screw, and performed satisfactorily; but she has since been fitted with Griffith's patent propeller, the same that has been proved so efficient in the *Weaver*. As the screw was only finally fitted on Friday night late, we can only judge of its performance by the vessel's passage as far as Holyhead. She left George's pier-head at 8.42 A.M., on Saturday, and passed the Bell buoy at 10.19 A.M., having run a distance of 15 miles, against a strong head wind, in 1h. 37m.; the greater part of the time also she had a heavy chopping sea to contend with, and the tide was against her for 40 minutes after leaving. She landed some of the party who were on board at Holyhead, at 4.30, about 75 miles' run, and having had a heavy cross sea and north-west wind to contend with, it was certainly a good performance for a vessel of 50-horse power—a result that can only be attributed to her superior model, and the great effective power of her engines. As the trial of Griffith's screw is looked forward to with considerable anxiety by those interested in screw vessels generally, we shall endeavour to obtain full particulars of the *Forerunner's* passage to London, and the action of the screw in the severe weather she had to contend with on Saturday night. But we may, in the meanwhile, observe that this screw differs from the ordinary one in the position of the greatest diameter, which, in the common screw, is furthest from the ship, but the reverse in Griffith's screw. In fact, it is just like a garden spade bent into the screw form.—*Liverpool Paper.*

IRON VESSELS.—A plan has been recently submitted to Government and private shipbuilders, by M. L. Arman, of Bordeaux, and Mr. J. J. Brunet, of the Canal Iron Works, Limehouse, with the view of obviating the objections which at present exist against iron vessels, owing to their ascertained unfitness for war purposes, and that when employed in warm climates they very soon become foul on the surface, an incrustation of weeds and shells being speedily formed, which very seriously retards the speed of the vessel, and in consequence of the material itself being liable to very rapid deterioration, there being several well-authenticated cases of iron vessels that have been employed for only a few years within the tropics, whose outward plating and frames, when exposed to the action of the water, is found entirely changed in character in many parts, and converted into a sort of plumbago, easily cut with a knife, and without any strength or tenacity. M. Arman proposes to remove these objections by building vessels of the most approved modern lines for speed, the outer frame and planking to be of timber, much thinner and lighter than vessels built entirely of timber, and within the outer frame to build one entirely of iron, also proportionably lighter than if built entirely of iron. The French Government have ordered the building of a corvette at Rochfort, to be named *La Megere*, with auxiliary engines of 220 horse-power, the specimens M. Arman built for the mercantile service of France having given great satisfaction. The plan appears well adapted for the mercantile service of this country, but it is not probable the Admiralty will order any vessel to be built where iron plating is used, as the splinters from it would be most destructive to the crews when splintered by 32-pounder shot, unless M. Arman can show by experiment that his iron is protected.

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Her Majesty's Decision on the Duke of Wellington's Funeral.

The event which has produced the following letter, written by the Earl of Derby, at the command of her Majesty, and addressed to the Home Secretary, has become matter of history:—His Grace the Duke of Wellington died suddenly at Walmer Castle, on the 14th of September. The feelings of the nation are so well expressed in the letter by Lord Derby, that we preserve it in the *Nautical*, and we have added after it the beautiful lines of Mr. Croker, which pourtray with so much truth and elegance the rarely united and noble qualities of the lamented Duke.

"Balmoral, Sept. 20, 1852.

"Sir,—Her Majesty received with the deepest grief, on Thursday last, the afflicting intelligence of the sudden death of his Grace the late Duke of Wellington.

"Although the Queen could not for a moment doubt that the voice of the country would be unanimous upon the subject of the honours to be paid to the memory of the greatest man of the age, her Majesty considered it due to the feelings of his Grace's surviving relations that no step should be taken, even in his honour, without their previous concurrence; and, accordingly, the same evening, in obedience to her Majesty's commands, I wrote to Lord Charles Wellesley (the present Duke having not then returned to England) to ascertain whether the late Duke had left any directions, or whether his family desired to express any wish upon the subject; and suggesting the course which appeared to her Majesty best calculated to give expression to those feelings in which the nation, as one man, will sympathise with her Majesty.

"Having this day received letters from the present Duke and his brother, to the effect that the late Duke has left no directions on the subject, and placing themselves wholly in her Majesty's hands, I hasten to relieve the public anxiety by signifying to you for general information the commands which I have received from her Majesty.

"The great space which the name of the Duke of Wellington has filled in the history of the last fifty years, his brilliant achievements in the field, his high mental qualities, his long and faithful services to the Crown, his untiring devotion to the interests of his country, constitute claims upon the gratitude of the nation which a public funeral, though it cannot satisfy, at least may serve to recognise.

"Her Majesty is well aware that, as in the case of Lord Nelson, she might of her own authority have given immediate orders for this public mark of veneration for the memory of the illustrious Duke, and has no doubt but that parliament and the country would cordially have approved the step. But her Majesty, anxious that this tribute of gratitude and sorrow should be deprived of nothing which could invest it with a thoroughly national character—anxious that the greatest possible number of her subjects should have an opportunity of joining it—is anxious, above all, that such honours should not appear to emanate from the Crown alone, and that the two Houses of Parliament should have an opportunity, by their previous sanction, of stamping the proposed ceremony with increased solemnity, and of associating themselves with her Majesty in paying honour to the memory of one whom no Englishman can name without pride and sorrow.

"The body of the Duke of Wellington will therefore remain, with the concurrence of his family, under proper guardianship, until the Queen shall

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have received the formal approval of parliament of the course which it will be the duty of her Majesty's servants to submit to both houses upon their re-assembling.

"As soon as possible after that approval shall have been obtained, it is her Majesty's wish, should no unforeseen impediment arise, that the mortal remains of the late illustrious and venerated Commander-in-Chief should, at the public expense, and with all the solemnity due to the greatness of the occasion, be deposited in the cathedral church of St. Paul's, there to rest by the side of Nelson—the greatest Military by the side of the greatest Naval Chief who ever reflected lustre upon the annals of England.

"I have the honour to be,

"Your most obedient humble servant,

"Right Hon. S. H. Walpole, M.P." "DERBY."

"Victor of Assaye's eastern plain,
Victor of all the fields of Spain,
Victor of France's despot reign,
Thy task of glory done,
Welcome from dangers greatly dared,
From triumphs with the vanquished shared,
From nations saved and nations spared,
Unconquered Wellington.

"Unconquered, yet thy honours claim
A nobler than a conqueror's name:
At the red wreaths of guilty fame,
Thy generous soul had blushed.
The tears, the blood, the world has shed,
The throngs of mourners, piles of dead,
The grief, the guilt are on his head,
The tyrant thou hast crushed.

"Thine was the sword which justice draws,
Thine was the pure and generous cause
Of holy rights and human laws
The impious thrall to burst;
And thou wast destined for thy part,
The noblest mind, the firmest heart,
Artless, but in the warrior's art,
And in that art the first.

"And we who in the orient skies
Beheld thy sun of glory rise,
Still follow with exulting eyes
His proud meridian height;
Late on thy grateful country's breast,
Late may that sun descend to rest,
Beaming through all the glowing west
The memory of his light."

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SCREW VERSUS PADDLE WHEELS.—The race between the paddle-box steamer *Humboldt* and the screw steamer *Great Britain* across the Atlantic was a most interesting and important one. They both started from New York at the same time, and arrived in England at the same time on Wednesday, one at Liverpool and the other at Cowes. The distance between Cowes and New York is greater than that between New York and Liverpool, and therefore the *Humboldt* must be considered to have had the advantage. The *Humboldt* is a remarkably fine steamer, and her voyage just completed was the quickest ever known between Cowes and New York. For a screw steamer to equal a powerful paddle-box steamer, however, and run across the Atlantic in eleven days, is a very significant fact. It is also worth noticing that the Peninsular and Oriental Company's screw steamer *Formosa* has just made the quickest passage ever known between the Clyde and Southampton Water, she having run the distance in 50 hours.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory. From the 21st of August, to the 20th of September, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter.		Strength.		Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M	P.M	A.M.	P.M.
		In. Dec.	In. Dec.	o	o	o	o						
21	S.	30·20	30·24	62	70	58	71	NW	N	3	4	og	be
22	Su.	30·30	30·28	68	73	56	73	N	NE	4	4	o	be
23	M.	30·28	30·30	68	70	56	71	N	NE	2	1	e	be
24	Tu.	30 20	30·14	64	69	56	71	S	W	1	1	e	or 2)
25	W.	30 05	29·95	63	72	57	73	SW	SW	4	4	be	be
26	Th.	30·05	30·09	66	70	60	72	E	E	2	3	be	be
27	F.	30·18	30·22	66	72	56	73	NE	NE	4	3	b	b
28	S.	30·12	30·07	68	75	56	76	E	E	1	1	of	be
29	Su.	30·11	30·11	64	72	59	73	SW	SW	2	2	be	be
30	M.	30·08	30·08	62	69	54	70	W	W	3	3	be	be
31	Tu.	30·07	30·09	62	66	52	68	SW	W	2	3	bep 2)	be
1	W.	30·16	30·20	63	68	53	70	SW	SW	2	2	bcp (2	be
2	Th.	30·30	30·28	60	70	50	72	SW	SE	1	1	b	b
3	F.	30·25	30·21	64	70	52	72	E	E	2	2	bf	be
4	S.	30·16	30·12	65	71	53	73	E	E	3	3	bef	be
5	Su	30·06	30·00	62	72	56	73	N	NE	1	1	of	bcpt 3)
6	M.	30·02	30·00	62	66	56	67	NW	NW	2	2	bef	orl 4)
7	Tu.	29·97	29·95	58	62	56	64	W	W	1	1	ogf	bcmtlr 3) (4
8	W.	30·00	30·00	59	66	58	67	NE	NE	2	4	otlr (2	be
9	Th.	29·96	29·94	61	66	55	67	NE	NE	5	5	qo	qo
10	F.	29·87	29·83	63	66	58	68	NE	NE	2	5	op 3) (2	qbcl
11	S.	29·89	29·88	60	64	56	65	N	NW	3	4	bcm	bcm
12	Su.	29·91	29·92	58	64	49	65	NW	NW	4	4	be	be
13	M.	29·96	29·96	57	63	48	64	W	NW	2	2	be	be
14	Tu.	29·98	29·94	56	60	48	61	NW	W	2	2	be	be
15	W.	29 62	29·47	56	60	49	62	N	SW	1	4	op (1 2)	or 3)
16	Th.	29·72	29·78	52	58	48	59	N	NW	2	2	bcm	bcm
17	F.	29·86	29·85	50	57	40	58	NW	NW	3	3	be	be
18	S.	29·65	29·26	58	58	42	59	SE	SW	3	4	or (2)	or (3)
19	Su.	29·41	29·56	56	55	54	56	NE	NE	2	2	o	o
20	M.	29·62	29·56	57	63	51	64	SW	SW	4	5	be	qbcp 2)

August, 1852.—Mean height of the barometer = 29·835 inches; mean temperature = 63·7 degrees; depth of rain fallen, = 4·42 inches.

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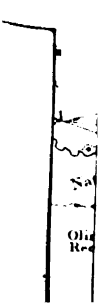

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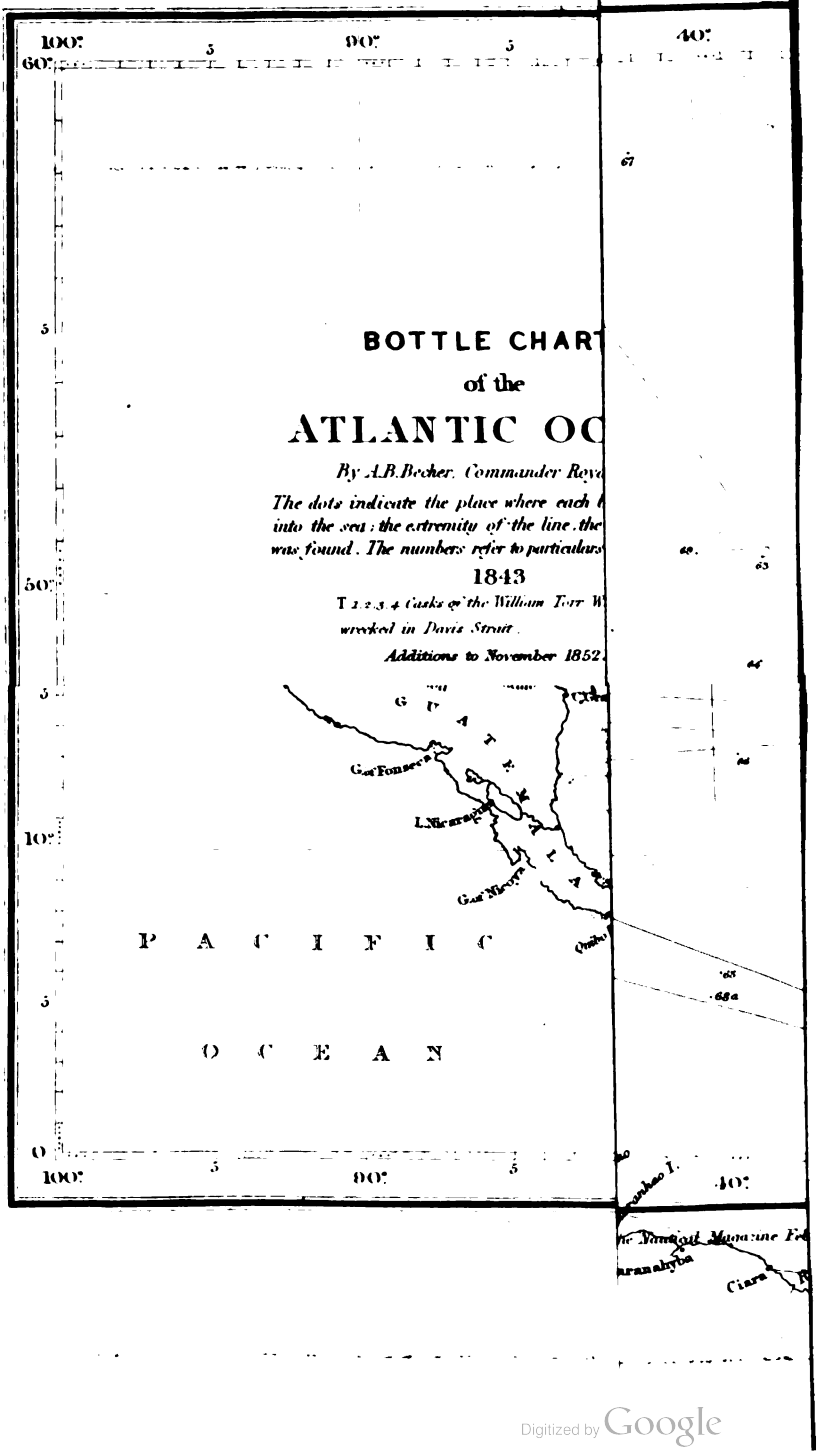
BOTTLE CHART
of the
ATLANTIC OC
By A.B.Becher. Commander Roya
The dots indicate the place where each b
into the sea: the extremity of the line the
was found. The numbers refer to particulars
1843
1 2 3 4 Casks of the William Torr W
wrecked in Davis Strait.
Additions to November 1852.
P A C I F I C
O C E A N
100°
90°
40°
60°
50°
10°
0
5
67
65
68a

THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

NOVEMBER, 1852.

The Bottle Chart of the Atlantic Ocean.

In the *Nautical Magazine* for 1843, there appeared the first attempt at a bottle chart of the North Atlantic Ocean, in which was collected all the known accounts of such experiments for ascertaining the general effect of the surface drift of that sea. The experiment was discouraged by some and encouraged by others. But curiosity has prevailed, and the objections to it have fallen lightly on the minds of the generality of seamen, who have continued the experiment, as the volumes of the *Nautical* published since that year amply testify. And our last volume contains an order by the Board of Admiralty that Her Majesty's ships shall follow up the experiment; for which purpose printed papers are supplied to each of them with their usual stores.

Having completed our chart with all those bottle-tracks which have turned up since its first appearance, it is again before our readers, affording them ample food for speculation as to the real track which each of these brittle messengers may have followed, from its departure to the end of its course.

It is not our purpose now to discuss these matters, although we may observe that the uniformity in the direction of their courses between the points of departure and arrival is very remarkable in most parts of the chart. In the equatorial regions, and in the more northern latitudes where the effects of the gulf stream and westerly winds prevail, this uniformity of direction is remarkable; as also the courses of those few which have been thrown over on the eastern limits of that stream. So that in many parts of the ocean before us, a good guess might be made at the direction which a bottle would take from them, when committed to the sea. So far as the surface drift is concerned, the experiment has been successful.

The catalogue which accompanies it will be completed in our next number, and we purpose printing, in successive numbers, the contents of each paper. In some of these will be found some curious announcements, varying in their character between the sober and the gay, and imparting information not only concerning the currents of the ocean, but of a more interesting kind, of husbands and wives, relations and friends.

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No.	Ships.	Signature.	Where Left. When.	Lat. N.	Long. W.	Where Found. Coast.	When.	Interval
				°	°			Yrs Days
1	Favourite....	Proctor....	14 De. 1833	49·0	5·8	France	4 Jan. 1834	.. 21
2	Lydia	Petree	7 Oct. 41	47·0	7·0	France	23 Nov. 41	.. 47
3	Graham Moore	.....	6 July 21	47·7	7·7	France	15 Sept. 21	.. 70
3a	Benbow	.....	2 May 42	46·8	7·7	France	July 42	. 60
4	Britannia	.....	5 Sept 35	C. C	lear.	Cornwall ..	11 Oct. 35	.. 36
5	Hope	Pender....	31 Mar 38	50·2	9·7	France	31 May 38	.. 61
6	Arrow	Sullivan ..	14 July 38	48·5	9·4	France	25 Feb. 39	.. 226
7	Malabar	.....	6 Aug. 38	43·4	9·0	Africa	8 Jan. 39	.. 155
8	Dead Whale..	Brooking ..	8 May 34	41·7	9·0	Portugal ..	6 June 34	.. 29
9	Gunboat	Rebuff	25 Oct. 10	39·7	9·6	Cadiz	19 Nov. 10	.. 25
10	Cashlton Park	Park	27 July 27	48·6	10·3	France	21 Dec. 37	10 146
11	Chanticleer ..	.....	3 May 41	44·6	11·1	Galicia	16 Nov. 31	.. 197
12	Osprey	M'Gill	1 March 22	49·6	12·5	Wales	6 April 22	.. 36
13	Erebus	Ross	14 Oct 39	39·3	12·7	Spain	19 Dec. 39	.. 66
14	Emerald	Nockells ..	17 Dec. 31	36·7	12·5	Anegada ..	8 Jan. 33	1 22
15	Lady Louisa..	Pallant....	2 Feb. 30	45·0	13·7	France	14 Oct. 39	9 254
16	Catherine ..	Wallace ..	25 June 17	44·0	13·7	Finisterre..	10 Nov. 17	.. 138
17	Morning Star.	.....	.....	42·7	13·1	Portugal ..		
18	Kinnear	Mallard ..	26 July 35	44·5	14·0	Teneriffe ..	28 June 36	.. 337
19	Freeland	Midgley ..	11 Feb. 33	41·8	14·4	Vigo	1 Mar. 33	.. 18
19a	W. Manning .	Huskisson .	9 Sept. 10	35·0	14·4	Hispaniola .	19 Oct. 15	5 40
20	Baretto, Jun..	Marshall ..	9 Dec. 39	44·8	14·3	England ..	12 Feb 40	.. 65
21	Wallace	Robertson .	12 April 35	52·2	15·0	Ushant....	20 Aug. 35	.. 130
22	Thetis	Bissett	18 Jan. 41	50·8	16·0	Hebrides ..	3 April 41	.. 75
23	Mary	Lock.....	12 April 32	48·5	16·9	France	4 Mar. 33	.. 327
24	Tyne	Hope	4 Jan. 34	46·6	16·9	Devon	16 Mar. 34	.. 71
25	Symmetry ..	Smith	9 June 25	Mad	eira.	Turks Isle .	9 June 35	10 ..
26	Maitland	Hodgson ..	22 April 38	49·1	18·3	France	25 Feb. 39	.. 309
27	Kent.....	W. L.	19 Aug. 36	50·3	19·0	France	23 Dec. 36	.. 126
28	Niger	Merret	7 Aug. 39	48·2	18·9	Quiberon ..	Feb. 40	.. 177
28a	Bolivar.....	.....	29 Aug. 40	46·9	18·6	.....	Dec. 40	.. 94
29	Mary	Lock.....	17 April 32	44·2	18·0	France	21 Feb. 33	.. 310
30	Flora	Shaddok ..	29 July 40	43·9	18·6	Cuba	1 April 42	1 246
31	Ibbitson	of Stockton	5 Nov. 26	55·5	18·3	Killala	3 Jan. 27	.. 59
32	Leeds	Sprague ..	25 June 28	49·8	20·4	Scilly		
33	President....	Scott	26 May 36	48·5	19·6	France	1 Oct. 36	.. 128
34	Virginia	.....	16 June 38	42·2	19·3	Cork.....	Aug. 38	.. 45
35	Kate	Cresswell ..	27 June 25	24·0	19·0	Cuba	28 Nov. 26	1 154
36	Gambia	River	.. 31	13·5	....	Virgin Isle.		
37	Persian.....	Mallard ..	23 Oct. 34	47·1	20·4	Ireland....	13 Feb 35	.. 113
38	Albert	Robertson .	24 Jan. 22	47·3	21·9	Somerset ..	29 July 22	.. 186
38a	Fanny	Pulmer....	16 Feb. 12	30·0	23·0	Penzance ..	4 Mar 13	1 25
39	Ardent	Duncan ..	22 Sept. 24	57·0	24·5	Lewis	12 Mar. 25	.. 171
39a	Superior	Manson ..	13 May 42	53·8	24·0	Dunnet H.	Nov. 42	.. 175
40	Enterprise ..	.....	5 June 32	45·1	24·3	France	17 April 33	.. 316
41	Thunder	Owen	24 July 33	28·4	25·5	Bahamas ...	12 Dec. 34	1 141
41a	Prs. Elizabeth.	.....	6 Sept. 08	14·7	25·0	Martinique .	18 April 09	.. 244
42	W. Lockerby .	Parker	22 Jan. 38	14·1	25·2	Grenadines.	10 July 38	.. 169
43	Osprey.....	.....	28 Mar. 20	5·2	24·7	Martinique.	13 Feb. 21	.. 322
44	Stratford	Locke	21 Jan. 36	4·1	24·3	Barbados ..	8 June 36	.. 139
45	Osprey.....	.....	17 Jan. 22	6·2	15·6	Trinidad ..	28 July 22	.. 192
46	Lady Montagu	Poore	15 Oct. 20	7·7	8·6	Guernsey ..	6 Aug. 21	.. 295
47	Mary	Godfrey ..	22 Mar. 40	47·3	27·4	Clare Isle..	11 July 40	.. 111
47a	Orbit	Boot.....	16 Nov. 11	46·8	27·0	Ireland....	3 Oct. 12	.. 330
48	C. Dunmore..	Robertson .	8 Mar. 28	27·4	28·0	Bahamas ..	19 May 29	1 72
49	Two Brothers.	.....	21 Nov. 26	17·0	26·0	Crooked I. .	8 Dec. 27	1 17

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No.	Ships.	Signature.	Where Left. When.	Lat. N.	Long. W.	Where Found. Coast.	When.	Interval Yrs	Days
				°	°				
50	D.of Marlboro'	Thom	14 Oct. 20	16·4	26·5	Hayti	24 July 21	..	283
51	Wellington ..	Liddell....	10 April36	15·3	27·4	NW Azores	21 Mar. 40	3	346
52	Wellington ..	Liddell....	11 April36	17·9	29·0	Abaco	1 Jan 37	..	265
53	Romulus	Crawford ..	27 July 19	57·8	30·7	Shetland ..	14 Nov. 19	..	110
54	Spermaceti ..	.....	24 June 40	40·2	30·8	Hebrides ..	26 Aug.40	..	63
55	Mary	Locke	29 Jan. 36	14·5	34·4	Jamaica ..	2 Nov. 36	..	278
56	Helen	Butman ..	10 Sept.34	47·3	33·6	Scilly	8 Mar. 35	..	179
57	Stratford	Locke	29 Jan. 36	14·5	34·4	Jamaica ..	2 Nov. 36	..	278
58	.....	.....	.....	....	....	.....	.....	.....	
59	Sandwich....	Squire	1 June 21	50·3	36·4	Hebrides ..	2 Dec. 21	..	184
60	Sisters	Pittman ..	17 Sept.28	44·1	36·9	Biarritz ..	.....	.....	
61	Isabella	of Leith ..	2 April 35	23·3	37.8	Tortola....	13 Sept.36	1	164
62	Echo	Belcher ..	1 Jan 37	17·3	36·6	Antigua ..	16 July 37	..	196
63	Amazon	Brodrick ..	3 Aug. 40	50·6	38·0	Ireland ..	June 41	..	301
64	J. Cropper ..	Marshall ..	10 Jan 24	48·3	38·1	Mounts Bay	12 Feb. 25	1	33
65	Blonde	Hall	23 Sept.26	35·5	38·5	France	15 June 42	15	285
66	Thunder	Owen	1 Aug. 33	13·3	39·2	Mosquito ..	5 Mar. 34	..	216
67	.....	.....	.....	....	....	.....	.....	.....	
68	Julia	Davidson ..	6 Nov. 21	6·0	40·0	Tobago ..	.....	.....	
69	Seine	.....	18 Sept.11	50·7	40·3	Kerry	18 June 12	..	274
70	Three Sisters.	Pollock ..	20 July 24	41·0	42·0	Mounts Bay	12 Oct. 25	1	86
71	Opossum	.....	2 June 39	27·2	42·0	Bahamas ..	22 May 42	2	354
72	Georgia	Baugh	no date	43·0	49·0	Finisterre..	no date	.....	
73	Albion	Thompson .	20 Oct 36	41·3	43·9	Hebrides ..	7 Nov. 38	2	18
74	Blonde	.....	28 Sept.26	43·5	38·5	France	16 June 41	14	261
75	British Queen	Hamilton ..	10 Aug 38	43·9	44·5	Nieuport ..	15 Oct. 38	..	66
76	Royal Union.	Grant	27 Sept.22	48·2	45·2	Scilly	11 Dec. 22	..	75
77	Hecla	Parry	16 June 19	58·2	46·9	Tenerife ..	29 July 21	2	43
78	Helen	.....	.....	47·0	47·3	Scilly	.. ..	.....	
79	Egardon Castl	Pittman ..	7 July 25	45·7	47·0	Andros Isle	10 May 29	3	297
80	Sarah	Mickle	29 May 25	49·0	48·2	Somerset ..	14 April36	10	321
81	Elizabeth	J. E.. ..	15 Aug.19	47·0	49·2	Rathlen Isle	21 June 20	..	311
82	Victoria	....	13 Aug 34	45·0	50·0	Lands End.	16 Mar. 35	..	215
83	Alexander ..	Parry	27 May 18	59·1	52·3	Staffa	28 July 19	1	62
84	Alexander ..	Parry	29 May 18	62·0	54·0	Donegal ..	19 July 19	1	51
85	London	Wreck	.....	61·5	57·0	Orkneys ..	20 Mar. 18	.....	
86	Fury.....	Parry	July 21	62·1	62·5	Donegal ..	9 Mar. 22	..	252
87	Merioneth ..	Morris	27 July 20	62·2	19·5	Bute.....	4 Sept. 20	..	70
88	Hecla	Parry	22 May 19	59·1	6·9	Norway ..	21 Sept.19	.	122
89	Racehorse ..	Home	20 May 35	8·6	52·0	St Vincent.	24 June35	.	35
90	C. M'Carthy.	Field	15 Oct. 24	22·0	53·5	Salvador ..	29 May 25	..	226
91	W. Miles	Pike	.....	18·5	37·3	St Eustatius	26 Feb. 39	.....	
92	Racehorse ..	Home	26 May 35	1·3	47·8	Tobago....	15 July 35	..	50
93	Emma	.....	17 June 38	11·1	58·8	G. Cayman.	27 Aug. 38	..	71
94	.....	.....	.....	45·0	60·0	Cornwall ..	.....	.....	
95	Racehorse ..	Home	16 April36	11·5	61·5	Maracaybo.	3 May 36	..	17
96	President....	Bradshaw .	12 July 34	35·6	62·8	Bahamas ..	1 Dec. 34	..	142
97	Newcastle ..	Napier	20 June 19	38·9	64·0	Ireland ..	11 June 20	..	356
98	Newcastle ..	.....	20 June 19	39·2	63·9	Azores	20 May 20	..	335
99	Osprey.....	Kisningh'm	21 April40	31·1	63·4	Porto Rico.	14 Jan. 40	...	54
100	C. Heselston .	Young	4 May 41	28·6	64·0	Bahamas ..	12 Mar. 42	..	312
101	Racehorse ..	Home	17 April36	12·2	65·8	Bonaire ..	22 April36	..	5
102	Fr. Spaight..	.....	Nov. 35	....	....	F. Ventura.	May 36	.....	
103	.....	.....	.....	....	....	.....	.....	.....	
104	Romney	Brown	13 May 33	42·2	66·4	Nova Scotia	13 June 33	..	31
105	S. America ..	.....	Mar. 33	40·5	68·0	Lancashire.	34	.....	

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No.	Ships.	Signatures.	Where Left.			Where Found.		Interval
			When.	Lat. N.	Long W.	Coast.	When.	
				°				Yrs Days
106	J. Esdaile ..	King.....	28 July 21	36·9	71·8	Lancashire.	5 D ec. 22	1 130
106a	Dispatch ..	Chouder ..	14 May 38	39·2	72·7	New York .	25 June 38	.. 42
107	Robert	Coulter....	.....	Alto	Vela	Florida....	.....	.....
108	Chanticleer .	Austen....	23 Feb. 31	15·5	76·0	Yucatan ..	20 April 31	.. 56
109	Lark	Smith	20 July 39	16·0	76·3	Mexico....	25 Mar. 40	.. 249
110	Dove	Kehoe	.....	16·0	78·5	Ireland....	Aug. 37	.....
111	Thunder ..	.....	10 Mar. 34	Sera	nilla	Honduras..	23 April 34	.. 44
112	Lark	Smith	21 May 40	16·4	82·5	Mexico....	1 Nov. 40	.. 164
113	Thunder ..	Barnett ..	29 April 40	Cha	gres.	Belize	1 Oct. 40	.. 155
114	Lark	Smith	29 Nov. 38	25·5	79·3	Madeira ..	2 Oct. 40	3 308
115	Lark	Smith	12 July 38	24·5	83·2	Florida ...	20 May 39	.. 312
116	Briton	Gordon .	2 Feb. 30	27·9	84·7	Florida....	12 Oct. 30	.. 253
117	Lark	Smith	31 Jan. 38	20·7	85·6	Galveston..	26 May 39	1 115
118	Thunder ..	Owen	25 May 34	17–7	86·2	Yucatan ..	3 July 34	.. 49
119	Pilot	.....	13 Jan. 40	23·7	87·6	Texas	16 Sept. 40	.. 237

(To be continued.)

Notes on a Voyage to China in Her Majesty's late Screw Steamer Reynard.—*P. Cracroft, Commander.*

(Continued from p. 527.)

On Monday, March 4th, we left the Cornwallis Rock, under steam; it was a dead calm, which, to my surprise, continued until we were abreast of the Pagoda in Chemo Bay, when the monsoon sprang up, and gradually freshened to a strong breeze, in fact before midnight it was blowing half a gale of wind. Stood out for the night, under fore and aft sails; at 6h. 30m., A.M., tacked, set the topsails and foresail, weathered Osceu, and fetched in to windward of the Great Lamyett, the cones of which were recognized directly, although the weather was very thick and hazy; succeeded in weathering the dangerous rocks to windward of the Lamyetts, over which a heavy sea was breaking, and entered the Straits of Hae-tan. Here the water was comparatively smooth, and, notwithstanding the gale was dead in our teeth, I was in hopes of reaching the snug anchorage to windward of Chimney Island, before dark; but at 2h. P.M., when abreast of Sandy Island, the engineer on duty, Mr. Outram, reported the engines running away, and feared some accident had happened to the propeller. On lifting it, such proved to be the case, one blade was broken off close to the boss; let go the anchor immediately in fourteen fathoms, and shifted the screw, an operation which to my satisfaction was completed, and everything ready for going on ahead within two hours; took advantage of the opportunity to shift the foresail also, which was split

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this morning, in carrying on through a squall. By this time it was nearly dark, so I veered to fifty fathoms and held on for the night.

At low water, the cause of the accident to the propeller was disclosed. The ship was surrounded by fishing stakes; one of them which stuck up in the fore rigging I ordered to be got on board; it measured twenty-seven feet in length, and ten inches in diameter at the thick end; no wonder the propeller broke. These fishing stakes were not visible at high water, so it was impossible to avoid them, but I shall be cautious in steaming through these straits again.

It blew too hard all Wednesday to move, but the next day we got up to windward of Chimney Island, the weather looking too bad outside to venture farther.

Observatory Island bearing	N.W.¼W.
Inner Rocks ditto	E.b.N.¼N.
N.E. extreme of Chimney Island ditto	S.¼W.

Friday brought with it no change for the better, but I determined, *à tout prix*, to try my luck; started at 7h. A.M., under steam and sail, and weathered Turnabout, (no island could have a more appropriate name,) but the first tack cost us the foretopsail. So discretion being the better part of valour, I decided at once, bore up, and before noon we were at our old anchorage once more; and, as the event proved, the decision was a most wise one. The weather got gradually worse, to seaward *nubibus hic tumidus fluctibus ille minax* might be applied with great truth. The rain descended in torrents on our devoted awnings, and for five days the prospect was most gloomy. Fortunately the fund of information and flow of good humour of my guest helped to counteract any little *désagrémens* that, under such circumstances, were unavoidable. The long evenings were helped out by a game at whist, and it was agreed, *nem. con.*, that we might be worse off than at anchor in the Straits of Hae-tan.

The new moon, on Thursday, gave no promise of better things, even the fishermen, those living barometers on this coast, made no sign. In spite of the uninviting prospect, however, I got away at daylight, under steam, but for five hours nothing could be more discouraging. I kept very close in shore, passing inside the Triple Islands, and managed to get abreast of Turnabout at last; made all possible sail and stood out. There was a heavy swell from N.E., and the first tack hardly brought us to windward of where we started from; but about eleven o'clock a change came o'er the scene, the barometer began to rise, the sky to clear, the breeze drew round and enabled us to lay our course, and we let go the anchor under the White Dogs before 6h. P.M., in a *dead calm*. Such are the alternations of weather on this coast. Who would have imagined at eight o'clock this morning, that we should have been snug at this anchorage before sunset.

March 14th.—At 9h. A.M., stood for the entrance of the Min once more, and were safe at anchor in the Woga Creek before noon. In the afternoon I took a stroll with Mr. Fortune in the neighbourhood

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of the Creek, and was struck with the altered appearance of the country during the short interval that has elapsed since my last visit; quantities of a ground lilac (daphne fortuna sinensis) and other spring flowers, in full bloom, carpet the earth, wherever the declivity of the hills terminates the labours of the husbandman; the terraces look joyful also, the wheat is well up out of the ground, and nature cries aloud through all her works. This I take to be the pleasantest season of the year here.

16th.—Since the accident of the 23rd of January, which demonstrated the danger of burning wood with the bark on, (and nothing else is to be had without doubling its price,) I have not ceased making inquiries after coal, and to-day, Mr. Compton sent me for trial, half a picul (60lbs.) that he had procured from a Chinese dealer at Foo-chou-foo. There were two qualities of it, one, according to the description that accompanied the consignment, is designated by the dealers Mei-tan-pi, by which is meant the upper stratum or surface coal; it very much resembled jet, and is of a duller look and heavier substance than the substratum. The other quality, which is almost all dust, is used by glassblowers and blacksmiths mixed with charcoal, and will not burn without. The place which produces it is called the Loo-poo-hill, distant from Than-woo-foo twenty-five le,* or about nine miles, and it could be delivered at Foo-chou-foo for 4½ dollars a ton. A short trial in the distilling galley soon showed that neither kinds were suitable for steaming purposes, so I filled up with wood again.

Late on Sunday evening, the 17th, Mr. Jackson and his family made their appearance, in two large river junks. They had left Nantai before noon, and had been nearly ten hours coming down.

Got away the next afternoon under salutes from the opium ships, a compliment to my passenger, who seems to have been much and most deservedly respected, which I returned with seven guns. There was a heavy swell on the bar; however we got safe over, and most devoutly do I hope this is the last time I shall have to cross it. Lifted the propeller, and shaped a course to pass well clear of the Lamocks, but there must have been a strong indraught, for in the morning we found ourselves very close to Square Island, a perforated rock to the southward of Tong-sang harbour; fortunately the lead gave us ample warning, and the soundings appear to be laid down on the chart so correctly that no one ought to come to grief here.

Towards nightfall on the 20th, the breeze fell light, and our position was by no means pleasant; however the thick mist which prevailed the greater part of the day cleared off a little, and we were enabled to thread our way through the Lamock group in safety.

How thankful every navigator of these seas ought to feel to Captain Collinson for his invaluable charts; the two dollars I invested in my copy of these rocks and dangers were amply repaid me last night. I shall take this opportunity of noting that all the charts of this coast by which the ship has been navigated since December, were either

* The le varies in length in different parts of China.

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purchased by myself or were tracings of the manuscript copies kindly lent us by the captains of the opium ships.

Thursday, March 21st.—The breeze died away in the afternoon, and, as there was every appearance of the calm weather continuing, the steam was got up at 3h. P.M.

The next morning at ten o'clock we passed close to the remarkable looking rock Pedra Branca. Entered the Lymoon Passage at sunset; and, at 8h. P.M., anchored in Victoria Harbour, Hong Kong. Found the *Hastings* and *Phlegethon*, a small iron steamer, hired from the East India Company, for service in the Canton river, at anchor here.

March 23rd.—Whilst I was at breakfast with the senior officer on board the *Hastings* this morning, a requisition arrived from the Governor to send a ship in quest of two junks that had committed an act of piracy in the vicinity of Macao, on some fishermen belonging to Aberdeen in this island. I was soon ready for sea; and with Mr. Caldwell, an officer belonging to the police force, and two Chinese to identify the vessels, started under steam and sail in pursuit. We had hardly rounded Green Island, before the piratical junks were descried standing towards Hong Kong. I steered to cut them off. On perceiving us they tried to escape by means of their sweeps; but finding this impossible, a portion of the crews took to their sanpans, and endeavoured to gain the shore, which several succeeded in doing, in spite of the fire of round and grape which was opened on them. Lieut. Fuge, although still suffering from the effects of the fire at Amoy, took the command of the boats, and succeeded in capturing several of the fugitives after a stout resistance; many jumped overboard and were drowned, preferring this death to the fate they had good reason to believe awaited them if taken prisoners. Altogether fourteen out of about sixty* composing the crews were taken. On boarding the junks the victims of this outrage were discovered in a dreadful state, from gun-shot wounds, burns from stink-pots, &c. At 8, P.M., I took them both in tow, and had them safe at the anchorage by 10h. 30m. The next morning the prisoners were handed over to the authorities to be dealt with according to law; and another pirate was discovered in the foremost compartment of one of the junks, who had been in it all night up to his neck in water, and was almost insensible from the exposure; he was sent to the civil hospital, but expired in the course of the day. This increased the number captured to fifteen; a villanous-looking gang, who will now receive the punishment due to their misdeeds. All had dollars concealed upon their persons; and on searching the junks, quantities of arms of all descriptions, stink-pots, &c., were found on board, besides 12 broadside guns, two of them 24 pounders, evidently of English manufacture. On Monday I attended the examination of the prisoners at the Police Office, and they were fully committed to take their trial at the next assizes to be holden in the city of Victoria; the Second Lieutenant, Dickens, being sub-

* I believe there were many more, but this was the number sworn to at the trial.

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pœnaed to appear as evidence for the Crown against them. I think there is little doubt of their being all convicted of piracy*.

On the 5th of April I hauled alongside the *Sir George Pollock*, a fine Moulmein-built ship, which has just brought out the Bishop of Victoria, and filled up with patent fuel; the bunkers hold 70 tons of coal, and we have not taken any in since the 31st of October, at Labuan; since that period we have steamed 1,120 miles, and made good 3,992 miles under sail; this includes two beats up the Formosa Channel against the N.E. monsoon. To prevent the chance of running short of fuel, I had purchased, at different periods, 60 tons of wood, and now, to obviate the possibility of this becoming necessary on the long cruize, which the senior officer hinted to me to day is before us, I took on board as much of this patent fuel as I could cram, and by building it in carefully brick by brick, filling the platforms in the engine room, passages between the boilers, with a flooring in the stoke-hole, we succeeded in stowing away nearly 100 tons, enough to carry us full 1,500 miles in calm weather. The engineers have been hard at work lately making a new blade of boiler plate for the propeller; on Saturday afternoon it was ready for trial, and as soon as the fuel was all on board, I went out of the harbour, gave it a good shaking, and found it answer perfectly. This is a great triumph for Mr. Outram, who has thus accomplished, entirely from his own resources, and in the confined space of the stoke-hole, an object supposed by many engineers

* The trial resulted in the conviction of twelve, of which three were sentenced to death, and were executed at West Point, and nine to transportation, for life; the remaining two were acquitted.

[The Hong Kong paper, which gave the report of the trials, had the following remarks:—"The most important case was that of the pirates captured by the *Reynard*, and the result more fully evinces the discretion of Captain Cracroft in capturing these men, and leaving them to be dealt with by the constituted authorities; by such forbearance, moreover, he has been the means of rescuing two innocent men instead of consigning them to a common destruction. The service against the Chinese has hitherto been undertaken too much in the spirit of the motto of a noble Scottish family, 'Spare nought;' and head money has not encouraged that discrimination and inquiry which we cannot help thinking are more calculated to root out piracy, than returns of killed and dispersed, who look more formidable on paper than they prove in action. It redounds not a little to the credit of Capt. Cracroft, that he should have adopted a course less *ad captandum*, but far more efficient; and we trust it will be followed whenever a more important occasion demands his services. He seems to have been chiefly desirous to take prisoners and save the innocent, and were it for nothing else this affair would deserve to be recorded for the remarkable circumstance of no return of 'killed' being made, though an unusually large proportion of the estimated number is satisfactorily accounted for, two thirds having been either drowned or captured and handed over to the civil authorities.

"If all the expeditions undertaken by our naval forces during the past twelve months had been as legitimate in their objects as this one, it is probable that the cause of justice and commercial security would have been better served, and the proceeding more in accordance with and creditable to our national character."—ED.]

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to be impracticable. I trust his ingenuity and skill will be rewarded as they deserve*.

April 8th.—Received orders to proceed again to Amoy, and from thence to Shanghae, where I am to receive on board a dispatch from Lord Palmerston to Muh-chan-gah, the Imperial Prime Minister at Pekin, and convey it to the mouth of the Peiho, in the Gulf of Pih-chi-li, for transmission to the Capital. Unfortunately at the moment when they can least be spared, I am deprived of the services of both my Lieutenants; the Second is obliged to remain behind for the trial; and the first went to sick quarters to day on board the *Minden*, with little chance of ever rejoining, the affair with the pirates on the 23rd ult. having completely floored him.

Every thing being ready, I got away under sail on Wednesday, April 10, but was obliged to anchor not very far from Green Island, owing to a calm with thick fog, which came on in the afternoon. This calm and fog lasted all Thursday and Friday, except for about an hour and a half, when I got under way, but was obliged to drop the anchor again. On Saturday morning, therefore, the steam was got up, and taking advantage of a clear moment, I started. After twelve hours running in a dead calm, a light air from S.W. sprung up, and as we cannot afford to burn coal in this way, the fires were put out. I was in hopes this air was the forerunner of the S.W. monsoon; but before the next morning we had the old north-easter again; and on Sunday morning tacked close in shore in the deep bay of Hie-Chie-Chin. At sunset tacked off the Figure Rock. The next day the wind was very variable, hauling round from S.E. to N.W., with sharp squalls from the latter quarter, which obliged us to lower the topsails; in fact, I did not know what was coming, the weather looked so dirty; we had some heavy rain also, which lasted all the afternoon, when the wind drew round to S.E. again. This is the kind of weather we must expect at this season I suppose, and it is any thing but pleasant. At 6, P.M., we were in 17 fathoms, the haze was very thick, and as we could not be any great distance from the Brothers, and islands in the vicinity of Rees Pass, I dropped the kedge, furled sails, and spent a miserable night; the rain was incessant, accompanied by thunder and lightning. About 3, A.M., we had a sharp squall from S.E., but our kedge and hawser held on well. About 10, A.M., the fog began to lift, and as there was a light air from the same quarter, I got under way, and in half an hour made Chapel Island, about three quarters of a mile distant, much to my surprise, for by the reckoning we were full fifteen miles from it. There was no mistaking the perforation, however, so we hauled in for Amoy harbour, the wind falling very light. At sunset, being unable to stem the tide, dropped the b. bower in the middle of the entrance between Tsing-seu and Chih-seu Islands. Observed H.M.B. *Mariner* at anchor under Taetan Island.

* The Lords of the Admiralty marked their appreciation of Mr. Outram's services by promoting him to the rank of Chief Engineer as soon as the Commander-in-Chief's report reached England.

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At 3, A.M., the N.E. monsoon came down on us "like a wall," as the opium people say, and it was astonishing how quickly a heavy sea came tumbling in too; this sudden change placed us in an unpleasant situation; so to prevent accidents I got the steam up, and was not sorry to find myself secure in 3½ fathoms, in the very snuggest anchorage I have been in on the coast of China, close under the lee of Taetan. A large English barque called the *Blundell*, with a cargo of Chinese Coolies, bound for Manila, was not so fortunate; she had anchored in the fair way just outside of us last night, and while our steam was getting up in the morning, I observed her in a very awkward position. Expecting to see the ensign reversed every moment, I desired a good look out to be kept on her; but she scorned our assistance, and shortly after getting under way missed stays, and struck on some sunken rocks between Tsing-seu and the main. Having been backed off, the injuries received were found to be of so serious a nature, that she was obliged to be laid on the beach in front of the joss-house on Taetan, to save her from going down; indeed but for the exertions of the emigrants, who stuck to the pumps most manfully, she must have sunk. Here, after having been lightened, she was hove up far enough to have her defects repaired by our carpenters and the *Mariner's*.

The *Mariner* has only just been hauled off from this beach herself, having been laid on it to repair some damage sustained by getting on the rocks to the westward of Seaotan in this harbour; and here I determined to lay the *Reynard* also, to examine her bottom and ascertain the amount of damage done in the Min last January. I am also anxious to ascertain the effect of a "protector" of zinc, which was fastened on the end of the screw shaft when in dock at Portsmouth a year ago, with the avowed object of preventing corrosion.

Accordingly having made the necessary preparations, on Monday, the 22nd, I hauled in at high water, and grounded the ship broadside on; found three sheets of copper rubbed off the starboard bilge nearly amidships, very high up; this must have been done in undocking, as no rock could by any possibility have touched her there. The zinc plate protector had disappeared from the end of the shaft, which was found very much reduced in size, and the square edges on it which ought to fit into corresponding squares when entered in the screw, were worn quite "round," to the extent of two or three inches. This corrosion would in time become a serious matter, and how to guard against it I know not; but I have no doubt the shaft will last at least two years longer, supposing the deterioration not to exceed its present ratio. It was impossible to get at the keel, the ground here was so soft; so with the night tide, at 9 P.M., I hove the ship higher up by the stream and kedge anchors laid out ashore, till there was a heavy strain upon the hawsers; the yard tackles had been hooked to the mast-head pendants, and bowsed down to other anchors lent us by the *Mariner* and the captains of the opium ships, and the inclination of the ship was 8° to port (towards the beach); but in spite of these precautions a little after midnight, in a heavy squall, the anchors, which it was thought had been buried deep enough to stand any strain, began

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to come home, and she righted, and went over 4° to starboard; as the beach was very steep, and the tide had left the ship almost dry, (the rise and fall being 18 feet,) I was in a stew until it was evident she did not intend to go over any farther.

At low water we found three or four feet of the false keel, just abaft the forefoot, started on one side and splintered; this was soon trimmed off. The main keel had suffered no damage; hauled off at high water.

The next day was occupied in swinging for the local attraction, which was found to be almost the same as in Portsmouth Harbour, the greatest variation differing less than 2° from our deviation tables.

April 26th.—I intended to have sailed to-morrow, but the *Blundell's* repairs cannot be finished till Monday, so at the earnest entreaty of the master, I consented to remain until they are done.

The Mids have taken advantage of our long detention here to get their berth, steerage, and chests painted; the joss-house on the island was their head-quarters while this was doing, the old Budhist priest in charge having no objection to let them occupy it for a small consideration. I suspect, however, such unusual visitors will not be forgotten for some time to come.

On Tuesday, April 30th, left the Six Islands under steam, and on quitting Amoy once more, I cannot help expressing my regret that its many capabilities should have been so completely overlooked at the termination of the war in 1842, when it was in our power, and we might have had it for the asking altogether.

Here, in my humble opinion, our head-quarters in these seas ought to have been established. Its magnificent and secure harbour, accessible in all weathers; a rise and fall of tide which would enable docks to be constructed without difficulty and at trifling expense, beyond the limits of the destructive typhoons; and enjoying a delightful climate, there is no other place on the coast of China that can compare with it for a moment. Then again, its position in a military point of view is most important, commanding, as it does so completely, the Formosa Channel. Commercially its proximity to the tea districts would give it a great advantage over Canton as a place of export, while the removal of our factory from the latter city would have been a just retribution for all the injuries and insults so continually and wantonly heaped upon our countrymen by the bigoted population; for its foreign trade removed, Canton would soon have dwindled into comparative insignificance.

As there was a good working breeze, I put the fires out after clearing the Quemoy Bank, and we anchored in Howetou Bay before dark; the next day we passed Chemo and its fishing stakes and Pagoda, and anchored off the entrance of Chin-Chew Harbour in the evening. This is a busy thriving place, with a large coasting trade, and more junks are built here than at any other port in China; but the inhabitants are represented as being scarcely less lawless and hostile towards Europeans than those of Chemo.

On Thursday we rounded Pyramid Point, and passing close to

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Ocseu, fetched up before dark under the Great Lamyett, anchoring inside the island, off the south point, in 12 fathoms.

The Ocseu group consists of three small islands; two only are inhabited. It has obtained some notoriety lately as a depot and place of rendezvous for the piratical craft that infest this neighbourhood, but I trust some day it will be turned to a very different use, its position being in my opinion the most eligible as a site for a lighthouse in these waters.

It will hardly be credited that, neither in this dangerous channel, nor (to the best of my belief) along the whole coast of China, does there exist a single light, buoy, or beacon! The time must ere long come when this subject will force itself upon consideration, for it is one of vital and increasing importance, inasmuch as the interests involved are increasing.

In the year ending December 31st, 1848, no less than 556 British ships, registering more than 204,000 tons, entered and cleared from the three ports of Canton, Shanghae and Amoy, alone; there is no return from Foo-chou-foo because the opium vessels anchor beyond the limits of the port, but the arrivals and departures in the Min must be at least 60 British vessels annually. Now, many of these vessels must have passed through the Formosa Channel, and, as the currents in it are very uncertain and rapid, the soundings irregular, and the greatest vigilance, it is notorious, has failed to insure security, the danger they incurred can hardly be over estimated. It has been, doubtless, in trying to keep clear of Ocseu that so many vessels have been wrecked on the Piscadores and Formosa; and to the perils of shipwreck on these inhospitable shores has been superadded in almost every case, the unmitigated hostility of the inhabitants. Many vessels must have been cast away here of which no account has ever been rendered; but, perhaps, the most melancholy wreck that has come to our knowledge, was the loss of the clipper brig *Ann*, commanded by one of the most skilful, experienced, and intelligent men in Messrs. Jardine and Matheson's employ, whose crew, after succeeding with great difficulty in getting safe ashore, were nearly all brutally murdered by the natives. It is surely high time that attention should be directed to this subject in England, and that shipowners and underwriters should decide upon doing something to lessen the risks to which their property is exposed in this dangerous navigation.

Saturday, May 4th.—It blew too hard all yesterday to move, so I held on here till four o'clock this morning; when, the monsoon having taken off a little, I got under way and stood out: found the current still running very strong, and we made but little progress against it.

Erratum—Foot note, p. 525, for *September, p.* 478, read *March, p.* 158.

[The remarks on Lights should not be lost.—Ed.]

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Sunderland Ships; or, an Historical Sketch of the Rise and Progress of Shipbuilding on the Wear.

> Near these a crew amphibious in the docks
> Hear for the sea those castles on the stocks.
> See! the long keel, which soon the waves must hide.
> See! the strong ribs, which form the roomy side.
> Bolts yielding slowly to the sturdiest stroke;
> And planks which curve and crackle in the smoke.
> Around the whole rise cloudy wreathes, and far
> Bear the warm pungent of o'erboiling tar.
>
> Crabbe's *Borough*.

It seems natural to imagine that, in tracing the rise and progress of any art or pursuit in any locality, our facilities for acquiring the necessary data would always bear some reasonable proportion to the value and consequence of the art and pursuit itself; in other words, that whatever has grown to be of paramount importance, either to the great world at large, or the minor world of some large community, must at every stage of its progress have left *some* marks and records which even the ordinary industry of research would at any time draw from their dusty nooks, and render available for the purposes of history. This, however, is too frequently not the case. Almost all history, alike of men and of things, of nations and of arts, shows clearly how much it is indebted, for good or for evil, for the abundance or the paucity of its materials to the mere caprice of fortune. It is thus that, in one age, she throws the priceless jewels of inspiration or of intellect, the Septuagint of the Hebrews, or the Pandects of Justinian, into forgotten holes and corners, to be reclaimed, for the happiness of a world, by some chance rummager in long after ages. It is thus that, when all the prouder media of bronze and marble, of "Volume, pillar, pile," have failed to prolong a memory, *she* prolongs it by a quaint bye-word or a jingling rhyme:—

> Pride sees the mighty shrink into a song.

And it is thus that she has rendered the early lives, in some illustrious instances the *whole* lives, of the world's greatest benefactors dark with impenetrable obscurity; or showing only a few passages or traits, by the dim light of tradition, as they have floated down to us on legendary currents, or the vague breath of popular report; while, on the other hand, she has not unfrequently "thrown a cruel sunshine on a fool," and enabled the little biographers of little men to load their useless volumes with the utmost fulness of circumstantial detail. These reflections have been forced upon us by our own unexpected difficulties in procuring the necessary materials for the present sketch. It was our first and natural impression, that the great subject of the shipbuilding of the greatest port (with reference to that crowning glory of mechanical art) in the greatest of all maritime nations, would, with

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due care and industry, be capable of the most ample and exact treatment; every step of its advance (we supposed) having left *somewhere* within reach of a willing searcher its individual impress and registry. We were greatly deceived. With the utmost anxiety to be copious and circumstantial from first to last, we must acknowledge that our delving labour has been—

Now in glimmer, and now in gloom,

and with a certain amount of disappointment at almost every thrust of the spade. It is really no idle boast to say that every possible source of information which the most careful reflection and the most earnest industry could suggest and use, has been fairly exhausted to procure the statistics we are now about to lay before our readers. The vein has certainly proved a scanty one, but we have as certainly worked it fairly out; and are therefore convinced that every subsequent attempt to deal more largely with the subject must necessarily be based upon our present narrative, as really embodying all that can be learnt of its early or present condition.

The truth is, very little documentary evidence can be adduced with reference to the progress of shipbuiding in Sunderland, for any considerable period, and none with regard to its early progress. This is the more singular, as well as provoking, because our good town is known to have been a place of some considerable maritime importance during the Anglo-Saxon period of British history; and it might have been expected that the proximity of a seat of learning which boasted a writer like the Venerable Bede, would have been favourable to some historical glance at her commercial relations. Her early achievements in the manufacture of glass, in which indeed she was then foremost as now in marine architecture, have found due commemoration, but whether the application of that useful and beautiful substance to the windows of religious houses gave it an importance in the eyes of religious writers which the construction of things so purely secular as ships, could not pretend to, certain it is that no mention of the latter art in the monkish records throws any light upon its origin or early progress. Yet, Benedict, the pious founder and first abbot of the monastery at Monkwearmouth, as well as several of his successors, is known to have made voyages to the continent, and it does not seem a very great stretch of partial conjecture to infer the probability of these voyages being made in home-built ships. It is clear from some allusions in a charter granted by Bishop Pudsey, during the latter half of the twelfth century, that Sunderland at that early period, had commenced intercourse with the continental shores to some extent; and to the same period may be referred what is probably the very earliest notice extant of her shipbuilding, as an individual branch of trade. We allude to the following passage in the *Exemplum anno*, 19 *Ed.* 3 *Regis*, 1346,—"Thomas Menvill occupavit quend' locum ibidem (Sunderland) vocat' Hindon, pro *ædificando naves*, et solvit proinde Episc' annual' redditum, 2s." (Thomas Menville occupied a

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certain place at Sunderland, called Hendon, for the building of ships, for which he paid to the bishop an annual rent of 2s.)

A gap of no less than 122 years separates this early hint from the next reference, which, although somewhat indirectly, points with sufficient clearness to the fact of our early foreign commerce. In the inventories and account-rolls of Finchale Priory for the year 1468-9, among other items of expenditure, we find the following entry: "Et solvit iiij xx *Waynscottis* emptis Sonderland xx iijs iiijd." (Paid for fourscore wainscot boards bought at Sunderland 23s. 4d.) Now as wainscot is certainly not the produce of this country, the "boards" bought at Sunderland must have been part of an imported cargo; and there is little reason to doubt that, with her increasing commerce, her energies in the great branch of ship-building would proportionably advance. The next reference which we can discover as to ships, is the following:—"The inventory of Ralphe Lambton, Esq., 10th Jan., 1593. At Pencher, £215; Biddicke, £16 8s.; Triblye, £72 13s. 4d.; Sunderland, 3 salt-panns, £10; 2 keiles wh. kables, anchors, and all other furniter xxxL." From this period, however, another dreary interval of absolute *un*-historical darkness, of which "all that we know is—nothing can be known," runs gloomily on till actually within three-quarters of a century of the present time. Some gleams of information and certainty then begin to break up "the palpable obscure," and it is curious to observe the then condition (as indicated by those gleams) of what is now so proudly advanced. About the year 1770 Mr. Thomas Robson (father of the present Mr. Robson, of Claxheugh), was an apprentice in the yard now occupied by Mr. Lawson Gales, of Hylton, from which *two* vessels, of from *nine to twelve keels*, were launched in *seven years*. It is difficult to contemplate this, except as a traveller who, from the mouth of a great river, crowded with masts of every nation, traces the stream backward through its narrowing banks, until, at the source, he can plant a foot on either side of the petty rill, or span it over with extended fingers. In the very yard we have just named as the theatre of that vast exploit of seven years, Mr. Gales, sen., during the period between 1812 and his retirement from business in 1845, built no less than 212 ships! To estimate our own progress by that of another port, we may just mention that from returns to circular letters of the Commissioners of Customs issued January, 1701-2, it appears that there belonged to Liverpool 102 vessels, (their aggregate measurement amounting to 8,619 tons,) manned by 1,101 seamen. Within the space of one week *recently*, about 150 ships of large burden sailed out of the Mersey. This is stated with some exultation by a Liverpool journal of good standing, and, even taking the rather indefinite term "*large*," in its fullest sense, we should not greatly shrink from placing a correspondent Sunderland statement in juxta-position with the Liverpool one. We cannot go back to 1701-2, but in 1786 it appears that there belonged to Sunderland 387 ships, manned by 3,183 seamen, and having an aggregate tonnage of 51,160. In 1828 the total registered tonnage of Liverpool was 149,070 tons, and the average size of each vessel was 199 tons. In

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1838 the registered tonnage of this port was 152,722 tons, average 199 tons.

To return to the comparatively early period. About the same period Mr. Reay commenced to repair, and soon after to build, vessels at North Hylton. He was succeeded by the late Mr. Robert Reay, and he again by Miss Margaret Reay.

About 1776 the late Mr. John Laing, elder brother of Mr. Philip Laing, commenced his apprenticeship with Mr. Wright, who was then the principal builder on the North Sands. In 1789 Mr. Henry Rudd built ships of from 9 to 10 keels burden. During the building of one of these, the bilge shores having slipped, the vessel fell over, and crushed a number of the unfortunate workmen to death. The fate of the poor fellows seems to have been peculiarly horrible, for, as the anecdote reaches us, "their bodies were taken up in fragments, and carried away in baskets."

In 1792 a very large brig, probably the largest which had at that period been constructed, was built by Mr. Havelock. It was named the *Themis*, was commanded by Mr. J. Thompson, and was of 574 22-94 tons burden.

About the same period Mr. John Laing commenced business for himself on the North Sand, and in 1793 was joined by Mr. Philip Laing. About that period an event in ship-building indicates great progress, and a spirit of adventure, worthy of the increasing port. Mr. William Havelock, of Southwick, built a large vessel for government, to be employed in the transport service (a most lucrative service in after years for the shipowners of the north, during the long and deadly war with our southern neighbours.) She was called the *Lord Duncan*, built of oak timber, and beech-plank in the bottom, (the wood then generally used in mercantile marine architecture), and of no less burden than 925 tons, old measure. This stately barque has the glory of being the first really "large vessel" built on the shores of the Wear. Our late excellent and lamented local historian, Mr. Surtees, of Mainsforth, has commemorated her in terms which we cannot resist transcribing.

"On the 2nd of March, 1798, was launched from the Southwick Quay, the ship *Lord Duncan*, the largest vessel ever built within the limits of the port of Sunderland; her extreme length being 143 feet 10 inches, her breadth 39 feet, and admeasuring 925 13-94 tons. Towards her completion serious apprehensions were entertained for her safety in launching, from the narrowness and shallowness of the river. These difficulties, however, were overcome by deepening that part of its bed which her prow would first strike, and by laying afloat several stop-beams, fastened with ropes, so as to gradually impede her velocity, and ultimately bring her up.

"Thousands of spectators covered the borders of the river, many of whom on the south side were engulphed to the middle by the rising of the water on receiving this ponderous body. She sailed on the 13th of July, 1798, for London, where she remained unemployed till 1800, when she sailed for Smyrna, and was there taken into govern-

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ment service till August, 1802. In 1806 she was chartered for the West Indies, and was accidentally blown up at Port au Prince in 1807."

In 1799 Mr — Smith built in a yard situated near what is (or was) called "Dame Dolly's Rock," and Mr. — Booth in another in the immediate vicinity. At the same period Mr. — Wiseman built at the "Sand Point" (opposite the "East House") ships of from 9 to 13 keels; and the importance attached to vessels of the latter size may be estimated from the fact that one of them received, *par excellence*, the high-sounding appellation of "Cropton's large ship." The spot honoured by the launch of this Phœnix of the northern waters in the 18th century has obeyed the stern law of earthly mutability; having been washed away by the encroaching tides, the place of Mr. Wiseman's building yard "knows it no more," and we have merely to add that the "East House" was built out of its stones.

We now come to the mention of two of our most enterprising builders —Messrs. John and Philip Laing, who built on the North Sand, and were the first to introduce the novelty of a floating dock on our river. They purchased an old man-of-war, one of those "Leviathans," taken during the last war with the Dutch, and after cutting away all her superfluous timbers, converted her into a very useful floating dock for the repair of vessels. The *Mary Laing*, lost this spring, was built in the bottom out of Laing's old dock. On leaving the North Sand, Mr. Laing built the dock now occupied by Messrs. Hall.

In 1799 Mr. Heward, sen., Mr. Blenkinsopp, Mr. Boothe, and Mr. Rudd had building yards at the North Sand.

About 1804 the number and distribution of yards on the river were as follows:—

Mr Tiffin's, situated near the "Hailing-house."
Mr Potts', as at present.
Mr Thomas Burn's, adjoining.
Mr Thomas Nicholson, the place now occupied by Mr John Hutchinson, at the foot of Sutherland-street.
Messrs. Bowes Brothers (?)

[A repairing dock occupied the space above the Bridge, where foreigners now load coals from the Lambton Staiths, and was known by the name of the "Jackdaw Dock," from the circumstance of a large number of that species of bird building their nests in the neighbourhood. This, we understand, was the first stone dock in the port.]

Messrs Metcalfe and Robson's building and dock yard, on the spot now occupied by the Hetton Staiths.
Mr Benjamin Heward, on the spot where the *Vimiera* was built.
Mr Cook, the yard now occupied by Mr Laing.

From this last named, no other yard occurred until reaching Hylton, where there were three, viz.: those of Messrs. Potts, Reay, and Gales.

On the north side of the river were the building yards of

Mr William Havelock; the spot now occupied by Mr Candlish.
Mr Philip Laing; the repairing dock and yard now occupied by Mr George Hall.

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There were no other yards between these and the North Sand, where the following were situated, viz:—

The late Mr James Hall's	Mr Heward's, and
Mr John Brown's,	Mr Whinnam's.

We have termed the North Sands a favourite locality for ship-building purposes about the beginning of the present century; and the scanty records of the next sixteen years justify the term. They state —and it is nearly all they state—that on the said North Sand, in the year 1807, Mr. James Crown built a vessel called the *Aspen*, of eight or nine keels; that Mr. Wake, Mr. Adamson, Mr. John Hutchinson, Mr. John Scott, and Mr. John Brown built there in 1810 (the vessels of the latter being about seven or eight keels). The annals of 1810, however, refer widely to progress in other quarters, as the following memoranda will evince:—In that year

Mr William Gales built at Hylton
Messrs E. and W. Potts, do.
Mr Robert Reay, at North Hylton
Mr Wandless, at Hylton Dean
Mr James Johnston, Pallion
Mr Thomas Wake, Quay-end, Southwick
Mr Philip Laing, Bridge Dock
Mr Benjamin Heward, Southwick
Mr Adamson, Southwick
Mr Cook, Southwick.

In 1815 we have the following list of builders:—

Mr John Watson, Ayre's Quay
Mr Richard Greenwell, Raven's Wheel
Mr Tiffin, Ayre's Quay
Mr Barry, Hetton Drop
Mr Hall, near the Bridge
Mr John Hutchinson, Panns
Mr Liddle, Pottery Bank
Mr Robert Ratcliffe, Southwick.

In 1820.

Mr James Allison, North Sand
Mr John Mills, North Sand
Messrs Cuthbert Potts and Co., North Sand
Mr Luke Crown, North Sand
Mr Henry Dobson, North Sand
Messrs Harrison and Oliver, North Sand
Messrs E and R. Lumsden, North Sand
Mr William Thompson, North Sand

In 1821 Mr. M. Dryden built ships, of from 7 to 9 keels, at Biddick, and Mr. John Humble, of 15 to 16 keels, at Chartersheugh.

In 1830.

Mr Kirkbride, Ayre's Quay	Mr Petrie, North Sand
Mr John Storey, North Sand	Mr Francis Oliver
Mr Byers, North Sand	Mr. John Harrison, North Sand.

In 1835.

Miss Sabina Staffo.d, Dame Dolley Rock, North Sand.

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As the earliest tabular statistic account now extant of Sunderland ship-building, we here append the following from Surtees, whose large and expensive volumes are not readily accessible to many of our readers:—

SHIPS BUILDING AT THE PORT OF SUNDERLAND, DEC. 1810.

Ships	Tons	Total Tons	Ships	Tons	Total Tons
1	—	510	4	200	800
1	—	500	1	—	170
2	400	800	1	—	150
1	—	380	1	—	140
1	—	350	4	130	520
5	320	1600	6	120	720
1	—	300	2	100	200
1	—	250	1	—	90
1	—	240	—		—
3	220	660	37		8410

Building in November, 1811.
33 Ships ..... about ..... 8020 Tons.
Building in November, 1812.
37 Ships ..... about ..... 8437 Tons.

AN ACCOUNT OF SHIPS BUILDING IN THE PORT OF SUNDERLAND MARCH 11, 1814.

No.	Builder's Names.	Tonnage.	Copper or Iron fastened.	How far built.	Time intended or can be finished.
1	Robert Reay	340	Copper	¾ finished	April
2	Messrs Gales	180	Ditto	Nearly finished	March
3	Edward Potts	210	Ditto	Ditto	April
4	James Johnson	220	Ditto	Keel laid	August
5	John Goodchild	80	Iron	Half finished	Uncertain
6	Benjamin Heward	155	Ditto	Nearly finished	March
7	Thomas Beven	205	Copper	Ditto	Ditto
8	Messrs. Davison	400	Ditto	¾ finished	May
9	Messrs. Booth	300	Ditto	Nearly finished	March
10	James Thompson	123	Ditto	Ditto	Ditto
11	Mrs. Burn	220	Ditto	Quarter finished	July
12	William Potts	200	Ditto	Keel laid	Ditto
13	Thomas Tiffin	208	Iron	Wales round	June
14	John Scott	369	Copper	Nearly finished	April
15	William Adamson	265	Ditto	Ditto	March
16	Ditto	85	Iron	Half finished	May
17	John Brown	105	Ditto	Ditto	June
18	Ditto	200	Copper	Nearly finished	March
19	James Crowne	400	Ditto	Half finished	June
20	Ditto	180	Ditto	Nearly finished	March
21	John Hutchinson	110	Iron	Wales round	June
22	Ditto	210	Copper	Keel laid	August
23	James Hall	230	Ditto	Half finished	June
24	Ditto	140	Iron	Ditto	May
25	Messrs. J. & P. Laing	154	Copper	Nearly finished	March
26	Ditto	260	Ditto	Keel laid	July
27	Robert Ratcliffe	254	Ditto	Nearly finished	March
28	Ditto	145	Iron	Floors across	June
29	T. Greenwell and Co.	190	Copper	Nearly finished	March
30	Robert Reay	320	Ditto	Ditto	Ditto
31	A. Cockburn and Co.	190	Ditto	¾ finished	April

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All these vessels were built on speculation, with the exception of six, viz.: No. 1, by Robert Reay, which was contracted for by John Hamlinton and Co.; No. 2, by Messrs. Gales, contracted for by John White, Greenock; No. 5, by John Goodchild, for himself; No. 10, by James Thompson, for himself; No. 25, by Messrs. Laing, for John Grimshaw; and No. 30, by Robert Reay, for himself.

Within the port of Sunderland there are twenty ship-builders yards, with four dry docks, and four floating docks. There are also five boat-builders' houses and yards, three on the south of the Wear, and two on the north side.

How many ship-builders' yards there may be there we cannot say, but the following list of vessels in course of construction appeared in the *Sunderland* of the 28th of August last.

COMPLETE LIST OF ALL THE SHIPS BUILDING AT SUNDERLAND,

With the Name of each Builder, Class and Tonnage of each Ship, and whether Sold or Unsold.

Name of Builder.	New Tonnage.	Years	Sold or Unsold.	Name of Builder.	New Tonnage.	Years	Sold or Unsold.
Abbey, William	650	13	unsold	Pile, John	400	10	sold
.....	150	8	unsold	Pile, James	360	8	unsold
Alcock, J. T.	350	10	sold	Potts, R. H. Brothers	530	12	unsold
Austin, Samuel P.	320	12	unsold	Ratcliff & Spence	250	8	unsold
Austin and Mills	290	10	unsold	Robinson, John	306	8	unsold
.....	900	13	sold	.....	900	13	sold
Barkes, John	200	7	unsold	Smith, John	350	9	unsold
Bailey, E.	220	8	sold	.....	700	13	unsold
Booth and Blacklock	500	9	unsold	.....	800	13	unsold
Booth, George	350	8	unsold	Short, George	430	8	unsold
Buchanan & Gibson	320	8	unsold	Stonehouse, Thomas	426	8	unsold
Byers, Messrs.	350	8	sold	Spence, Appleton	250	8	unsold
.....	300	10	unsold	Tiffin, Thomas	430	10	unsold
.....	270	10	unsold	Thompson, R. & Sons	320	8	sold
Candlish, J. and R.	330	8	unso'd	.....	850	13	unsold
Chilton, Wilson	500	10	unsold	Vatson, John	650	8	sold
Crown, William	320	10	unsold	.....	400	8	sold
Crown, John	300	10	unsold	.....	1000	7	sold
Hall, G. W. and J.	600	13	unsold	Wilkinson, William	250	8	unsold
.....	289	8	unsold	.....	700	13	sold
Harkess, William	600	12	sold	Wilkinson, Richard	500	8	so'd
.....	280	8	unsold	Worthy, George	400	10	unsold
Hutchinson, John	330	8	unsold	.....	300	10	unsold
Hutchinson, R.	400	10	unsold	HYLTON.			
Hume and Easson	350	8	unsold	Carr, Hylton	330	8	unsold
Hodgson, S.	300	8	sold	Carr, William	320	8	unsold
.....	400	8	sold	Hodgson & Gardner	255	8	sold
Hardie, James	230	8	unsold	Lister & Bertram	350	8	unsold
.....	300	10	unsold	Naisby, William	350	8	sold
Huswell, John	750	10	unsold	Reid, William	260	8	sold
Leithhead, Arrow	700	13	unsold	.....	205	8	unsold
Pearson, Willam	470	10	sold	Robson, Thomas	300	8	unsold
Petrie, William	230	8	unsold	Sykes and Co.	360	8	unsold
Pile, William	850	10	sold	.....	500	13	unsold
.....	300	7	unsold	Todd and Brown	380	8	unsold

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About the commencement of the present century, the only vessel in the goods trade between this port and London, was one named the *Supply*, whose voyages on the average occupied eight or nine weeks. Afterwards several of the leading merchants of the town joined and built a vessel of their own, named the *Sunderland Packet*, of 183 tons, which was launched from Messrs. Potts' building yard in the year 1811. She was built longer than vessels of her size usually were at that period, and was noted for making quick passages. The same parties afterwards added the *Durham Packet* in 1815, built by the Messrs. Adamson on the North Sand.

Previous to the year 1800, a small vessel of about three keels, was built on Bishopwearmouth Green! at the back of the house now occupied by Mr. Richard Chilton. It was constructed by a carpenter during his leisure hours, upon a small piece of ground attached to his house; when finished, there was a general holiday, and crowds assembled to see the little craft dragged down Keelman's Lane, (then called the Newcastle Way) to Southwick, where it was launched.

It may equally surprise our readers to learn that in 1817 two small vessels (it would be curious to know how small), were built in Nile street, on the very ground now occupied by Mr. Alcock's show rooms! We may conceive how it would astonish (or amuse) the worthy inhabitants of that district to behold what their fathers or grandfathers then beheld—namely, the said three vessels, built in a locality which now appears so strange for such a purpose, conveyed down the High-street on *bogies*, to be ultimately launched behind the South Pier. The further history of one of these little vessels is remarkable enough. She actually sailed to the West Indies as a sugar droger to a large ship called the *Janus*, which left the harbour, a few weeks before her. We may regard it as a fair indication, perhaps, of the diminitude of the adventurous little craft that, even in that age of daring voyages in comparatively small vessels, the attempt was universally considered as a piece of downright wild foolhardiness, and the destruction of the vessel itself as ultimately certain. In defiance, however, and contradiction to all this ill boding censure, the "wee thing" proved that she had not been

Built i' the eclipse, or rigg'd with curses dark.

She not only accomplished the voyage, and reached her West Indian port in safety, but did so a full fortnight before the "lazy hulk" of her superior. This voyage was justly considered a very extraordinary and daring feat of seamanship at the period; and we have a gratification in recording that it was accomplished by genuine sons of old Sunderland, the captain being Mr. Joseph Hunter, and the mate Mr. William Walker, the wharfinger.

The present position of our good town with respect to shipbuilding, contrasts strangely with her former position, even so late as 1835, when, on the institution of Lloyd's Registry, she was not found worthy to claim any exemption from the rule that "no ship built *north of Yarmouth* should have a classification of more than *ten* years." A

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stronger indication of her rapid ascent subsequently can scarcely be conceived. In 1793 the masters of vessels on the Wear and Tyne were so deficient in solid nautical skill, that ships were frequently detained in harbour eight or ten days from sheer incapability of procuring a captain fitted to take the command even to countries no further distant than Norway. The most expert and informed was, perhaps, only a fair specimen of the originals from which Falconer, the poet, drew his picture of a northern ship-master many a long year ago:

> The hardy sons of England's furthest shore;
> Where bleak Northumbria pours her savage train
> In sable squadrons o'er the northern main;
> Unskilled to argue; in dispute yet loud;
> Bold without caution; without honours proud;
> In art unschooled, each wonted rule they prize,
> And all improvement stubbornly despise.
> Yet, though full oft to coming perils blind,
> With skill superior glows their daring mind;
> O'er bar and shelf the watery path to sound,
> With dexterous arm, sagacious of the ground.
> Fearless to combat every hostile wind,
> Wheeling in mazy tracks, with course inclined;
> Expert to move where terrors line the road,
> Or win the anchor from its dark abode;
> Through snares of death the reeling bark to guide,
> When midnight snares involve the raging tide!

Nor was the mechanical skill of shipbuilders on a much higher level. Even in 1804, although a ship of 12 or 14 keels was kept on the stocks eighteen months or two years, her construction was far from excellent in proportion to the time occupied. The *form*, in general, if not invariably, was exceedingly rude and clumsy, approximating more to that of a *tub* (the scornful designatian often bestowed upon them since) than any youthful observer of our present beautiful and graceful vessels can possibly imagine to himself. The fact is, we believe, science had comparatively little to do with the matter. A few general principles, no doubt, gave a basis, but the superstructure was greatly an affair of guess-work and eye-work. Frames were laid down from 5 to 10 feet apart, near the centre of the vessel. Others were then placed at a distance of 20 feet, or so, from the bow and stern; and all the rest of the work was done at the arbitrary pleasuse of the builder, by his individual caprice or conjecture, lucky or unlucky, as the case might be, and far more likely, of course, to be the latter than the former. In fact, the results vouch for it; the ships generally being as unshapely hulks as ever rolled in a heavy sea. One great cause of deformity was the extreme disproportion of breadth of beam to the ship's whole length, not more than one to three and a half; that is to say, a vessel 70 feet long was about 20 feet broad. In some cases, however, the proportion was less; for in 1805, when Mr. Philip Laing left the North Sand for the Dock now occupied by Mr. Hall, the length of the first vessel he built (the *Betsey* of 129 tons) was 66 feet,

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and the breadth 22, being exactly one third. This proportion has been gradually wearing away up to the present time, when a ship's length is ordinarily four and a half to five and a half times that of its breadth. The improvement not only adds greatly to beauty of model, but to practical excellence in sailing. It gives a ship not only greater speed, but greater "sea kindliness," (as the phrase is,) and does away, in a great measure, with the heavy pitching and rolling motion of those "old familiar *tubs*" which, even in dock, a landsman could hardly look at without insipient sensations of sea-sickness! Yet, in 1810, a vessel built at Southwick, by Mr. Benjamin Heward, (the *Nicholson Nicholson* of 16 keels, or 200 tons old measure,) was considered of so fine a model, that the builder was presented with a piece of plate as a testimonial of high approbation.

Whoever now glances an eye along both banks of the Wear at Sunderland, and sees the number of splendid vessels in every stage of progress on the slips, will not easily conceive the state of shipbuilding, either as to size, construction, or number, at the period to which we have been adverting, say about forty or fifty years ago, a little more or less. The probability is that not twenty vessels were built in a year, and those very small ones; a ship of 400 tons being considered of prodigious and gigantic size. The state of the river, indeed, rendered the building of large ships impossible; and we gather some idea of it from the plain fact that a vessel after loading six keels of coals was compelled to go into the roads and receive the remainder of her cargo there.

Previous to the year 1815 the average tonnage of vessels built on the Wear was 180. Between that period and 1830 the average rose to 225; between that and 1840 to 286; and between 1840 and 1850 to 325. We must conceive that, somewhere within these respective periods, vessels of larger tonnage were occasionally built, but the statement we have just made is correct as to *average*. With regard to the increase of vessels in *number*, it may be indicated by the fact that recently, within *one* year, (the least) one firm alone, Messrs. R. Thompson and Sons, launched vessels to the extent of 2,900 tons; a greater number, no doubt, than all the yards on the Wear, at the periods we have adverted to, ever launched in an equal space of time. With regard to *dimensions*, it should be stated that in 1815 ships began to be built for the West India trade, and the tonnage of vessels increased accordingly; so that from 300 to 400 tons gradually ceased to be considered as a very extraordinary burden.

We may here add that shipwrights wrought generally then, if not exclusively, by piece-work, and engaged to build vessels at two guineas per ton.

With regard to the main *materials* of our shipbuilding, we have already said that oak and beech with English elm were the kinds of timber generally used. The former was chiefly from Pictree, near Lambton Castle. Previous to 1820 the *decks* of vessels were usually of Baltic red wood, to which succeeded American yellow pine; and, for the general purpose of shipbuilding, African teak, mahogany,

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green heart and East India teak, have gradually been introduced; the latter very extensively so. Hempen rope, previous to 1820, was almost universally used for cables; but from that time iron chain gradually superseded it.

The contrast between past and present in the condition of Sunderland shipbuilding has been repeatedly forced upon us during this brief sketch; and it would be curious, as well as instructive, to crown the whole by distinct descriptive reference to some of the fairest triumphs of that splendid art in our dock-yards of the Wear in the present day. We feel, however, that it would be a delicate, perhaps an invidious task, and will therefore (without the ungraciousness of individualising) merely state, for the general reader of other places, that vessels are now continually built on the Wear of no less than from 400 to 1400 tons burden, of as bold and admirable construction, and as symmetrical a model, as can possibly be launched from any dock-yards in the world.

The following is a list of the present builders:—

Abbay, W. R., Ayre's-quay
Alcock, J. T., Low-street
Austin and Mills, Low Southwick
Austin, S. P., (slipway) Bishopwearmouth Panns
Bailey, E., Ayre's-quay
Bambridge, G., South Hylton
Bartram and Lister, North Hylton
Barker, G., Monkwearmouth
Barkes, J., Monkwearmouth
Booth and Blakelock, Monkwearm.
Bennett and Co., Monkwearmouth
Briggs, W., Pallion
Brown, E., North Hylton
Buchanan and Gibson, Ayre's-quay
Byers, W. Monkwearmouth
Carr, H., North Hylton
Carr, W., South Hylton
Candlish, J. and R., Low Southwick
Chilton, W., Low Southwick
Clarke, M., Low Southwick
Crown, J., Low Southwick
Crown, W., Low Southwick
Douglass, D., South Hylton
Dryden, T., North Hylton
Forrest and Jackson, South Hylton
Gales, L., Hylton
Hall, G. W, and W. J., Monkwear.
Hardie, J., Low Southwick
Harkess W., Monkwearmouth
Haswell, J., North Hylton
Hodgson and Gardner, North Hylton
Hutchinson, J., sen., (docks), Low-street
Hutchinson, R., Monkwearmouth
Hutchinson, R & W., (slipway) Panns
Laing, J., Deptford
Leithead, A., Low Southwick
Leithead, A., Deptford
Lightfoot, T., North Hylton
Naizby, W., South Hylton
Pearce and Thackray, Ayre's-quay
Pearson, W. H., Ayre's-quay
Petrie, W., Low Southwick
Pile and Co., Monkwearmouth
Pile, W., jun., Monkwearmouth
Potts, R. H., and Brothers, Low-st.
Potts, R., Monkwearmouth
Ratcliffe, J., Monkwearmouth
Rawson and Co., Monkwearmouth
Reid, W., Coxgreen
Robinson, J., Deptford
Robinson, W., Low Southwick
Robson, T., Pallion
Rogerson, J., South Hylton
Short, G., Pallion
Simpson, J., Pallion
Smith, J., Pallion
Spowers, W., South Hylton
Stonehouse, T., Monkwearmouth
Stothard, N., Pallion
Sykes and Talbot, Coxgreen
Thompson, R., and Sons, Monkwear.
Taylor and Son, South Hylton
Tiffin, T., Monkwearmouth
Todd and Brown, North Hylton
Watson, J, Pallion
Watson, R. Y., Pallion
Wilkinson, R., Pallion
Wilkinson, W., Deptford
Worthy, W., Low Southwick
Worthy, G., Low Southwick.

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The following table shows the number of vessels built here during the last ten years:—

Year.	No.	Tons.	Average Tons.
1841	141	40,396	286¼
1842	107	26,837	250¾
1843	85	21,377	250⅞
1844	100	27,131	271¼
1845	131	38,260	292
1846	133	41,835	314½
1847	148	46,901	316¾
1848	142	37,878	266¾
1849	155	44,333	286
1850	158	51,374	325¼

At the end of the latter year, there were also 13 vessels of 5,780 tons; and 100 vessels on the stocks in the progress of building. No port in the world can approach this.

During the first six months of the present year there have been built and registered here 93 vessels, comprising in the aggregate 31,692 tons. Of these there have been sold to Sunderland, 41 ships (11,859 tons); other ports, 52 ships (19,833 tons). And at the present moment there are on the stocks 76 vessels, of 31,359 tons, most of them of a very high class.

In conclusion, although again and again regretting the paucity of our materials, and that so much of energy and skill, alike mental and manual, developed through a series of bold enlargement and sagacious improvements, within a period of comparatively few years, should not have been chronicled duly and succinctly by some careful pen; or, if such documents have existed, that they should not now be available—we yet hope and trust that our readers will think we have not discharged our duty either feebly or negligently. What we have done bears indeed little proportion to what is desirable, but we trust that it will be found in very fair proportion to what is possible. The things we sought we were very frequently unable to find; but what we could find we have endeavoured to sift needfully, and to use well. The workman and his means are alike dependant on each other. It has been said Homer could have done nothing with the language of New Zealand, or Phidias with an old fish-bone; and, in like manner, we may plead that the best architect can build no larger or better a fabric than the amount of his material admits. May the future historian be more fortunate in accumulation of facts, if not more expert in treatment and arrangement; and may he have to record that, from the year 1851, the stout hearted and true-hearted men of Sunderland—

> Men our brothers, men the workers, ever reaping something new;
> That which they have done but earnest of the things which they will do—

rose rapidly in the scale of commercial and maritime greatness, and by increased vigour and enterprise, knowledge and wisdom, based their prosperity above all the shocks of accident, and all the languor of decline!

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Shipwreck by Lightning.—Destruction of Merchant Ships.

Intelligence was received at Lloyds, on Saturday the 25th of September last, of the total destruction of the ship *Maise*, of Queenstown, by lightning, off Malta. Notices of this terrible catastrophe are given in the *Times* and *Morning Herald* newspapers of the 28th September and 10th of October last. It appears from these accounts, that the ship, being on her passage from Ibrail to Queenstown, was overtaken on the 3rd of August last, by a violent thunderstorm: towards midnight she was struck by lightning, on the mainmast, which, passing down into the hull, broke the vessel up into two parts. The ship went down almost immediately; the crew, fourteen in number, together with two passengers all perished; the master (Pearson) alone escaped, by means of a floating spar, on which he continued to buoy himself up for seventeen hours; at the end of this time he was fortunately picked up by a Maltese coaster. The *Morning Herald* of the 10th of October has a more detailed account of the circumstances of this most appalling instance of shipwreck by lightning, given by the master himself, who had arrived home after enduring great suffering and privation.

The vessel belonged to Messrs. E. Young and Co., of South Shields. The master states that, being on deck towards midnight during a dreadful storm of thunder and lightning: "Before any one had time to say God help us, a ball of fire came out of the heavens struck the masts of the vessel and in a moment she capsized;" he computes that within three minutes the vessel went down with all hands on deck. The master and a poor lad called Murray, who afterwards perished, were the only persons which escaped at the time, by means of floating wreck.

Having frequently devoted the pages of this work to a full and searching analysis of the important question of an efficient means of preserving ships against the destructive agency of lightning, we cannot pass by this recent instance of shipwreck by lightning, without a few remarks on the vast amount of similar destruction which has occurred and still continues to occur in our merchant service, from the irresistible expansive power of this terrible element. It would be a laborious but, perhaps, not altogether an unprofitable task to seek out and record cases of merchant ships damaged or destroyed by lightning. That such cases are most numerous and of an appalling character is quite certain, and it is to be greatly regretted that more attention has not been given to the subject by mercantile men. One of the great obstacles in the way of effectually preserving merchant ships against casualties by lightning has certainly arisen out of the system of insurances. The merchant or shipowner, calculating on the chances of damage by lightning, effects an insurance on his vessel such as will, in all probability, cover this chance, and, as

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is well known, taking the question as one of mere pounds, shillings, and pence, it is really of little consequence to him, as he commonly avows, whether his ship be damaged by lightning or not; in fact the destruction of his vessel in this way, may turn out rather beneficial than otherwise. Life and property as a money question are but little regarded. The real question, however, as a question of public safety, especially in these days of large emigration, is nevertheless of vast public importance, and, as we see in the case before us, evidently calls for some prudent legislation.

When we consider that the Royal Navy is proved to be perfectly secured, at least against all the fatal consequences of lightning, it is certainly to be regretted that our Merchant Navy should be still left exposed to the ravages of this most destructive agency. Within a comparatively few years, we find records of at least twelve fine merchant ships totally destroyed by lightning and their rich cargoes lost, to say nothing of numerous others which have all but perished or have been otherwise severely damaged. It may not be out of place to enumerate on this occasion a few of these instances, with a view of showing that the instance just referred to is by no means an uncommon occurrence.

In 1832, a fine ship, the *Logan*, of New York, bound to Liverpool, having on board 75,000 dollars, was struck by lightning at sea, and totally destroyed. The *Tanjore*, a fine new ship out of Hull, was destroyed in the West Indies, in a similar way in 1820. In 1834, a large ship, the *Sir Walter Scott*, was burned by lightning in the Bay of Biscay, and became a total wreck within an hour after the electrical discharge fell on her spars. In 1838, the ship *Ruthelia* was struck by lightning in crossing the Atlantic, from Orleans to Liverpool, laden with 1,531 bales of cotton, and entirely consumed.

The unfortunate ship *Poland* was burned in a similar way by a heavy stroke of lightning, which fell on her foremast, near the Nantucket Shoals, May 16th, 1840; the passengers and crew were fortunately rescued from the burning ship, after intense suffering, by the ship *Clifton*, bound from Liverpool to New York. In 1845, the ship *Bayfield* of Liverpool, was struck and destroyed by lightning, on the coast of Africa. The shock was fearfully violent, Captain Lucas and the greater part of the crew were knocked down and remained for a time insensible. The electrical discharge passed down the masts into the hold, the vessel caught fire and became a total wreck. The ships *Bolivar* and *Lydia* are again two fine merchant ships recorded to have been destroyed by lightning. In 1846, the *Thomas Cope*, a large American liner, was struck by lightning at sea, and totally lost.

Amongst the Borneo papers of Sir James Brooke, we find a memorial relating to the destruction, by lightning, of the British ship *Sultana*, of 600 tons, in January, 1841, whilst on her voyage from Bombay to China. All the passengers and crew, eighty-seven in number, proceeded in open boats to the Island of Borneo, and suffered extreme privation and misery for twelve days; after which they were plundered and detained in a hopeless captivity.

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In December, 1847, the ship *Robert Shaw*, of 600 tons, laden with cotton from Charlestown, was struck by lightning off Ushant, and set on fire. Master and crew escaped in the boats to the coast of France. The ship was observed in a burning state off Portland three days after, and seen to go down on the 10th. Recorded in *Times* newspaper for the 12th, 13th, 15th, and 20th of December, 1847, with a letter from the Captain.

In July, 1848, a merchant ship was struck by lightning, off Boulogne, and consumed within sight of the coast. In May, 1849, a sloop, the *George and Mary*, was struck by the electrical discharge, off Scarborough, and within half an hour was a total wreck. (*Greenock Advertiser*, 4th May, 1849.)

These are a few instances only in which merchant ships have been actually destroyed by lightning.

The following are a few interesting cases in which such damage has arisen as to place the vessels in very imminent peril:—

In 1827, the packet ship, *New York*, was twice struck by lightning in the Gulf Stream. The spars were set on fire, the bulk heads below decks smashed in pieces, and three five-inch planks started in her side.

In 1830, the barque *Orwell* of Liverpool, laden with cotton, was struck by lightning, at sea, which set fire to her sails and cargo, the ship fortunately reached Liverpool, although in a burning and sinking state.

A fine new ship, the *John Bryant*, of 700 tons, was struck by lightning so lately as December, 1850, off Cape Clear, and partially destroyed. The ship was picked up and towed by the *Devonshire* steamer, in a burning and sinking state, into Dublin. The ship and cargo were insured for £30,000.

The fine East India trader *Madras* was struck by lightning, on her passage to Calcutta, in May, 1840, which ruined the spars, tore up the deck, and struck a hole through the side nearly a foot in diameter. Two large cartridges of gunpowder were exploded in the cabin, and two barrels of gunpowder caught fire, but the fire was luckily extinguished on the instant.

In 1843, a large transport, the *Marian*, having part of H.M. 49th regiment on board, was struck by the electrical discharge, off the Cape of Good Hope. The deck was ripped up, the vessel set on fire, five men killed; nothing but the unwearied exertions of the soldiers and crew saved the ship from becoming a total wreck.

In August, 1842, a large transport, the *Defiance*, having on board troops and government stores, with rockets and shells, was struck by by lightning, off Nankin, in China, her spars destroyed, and the ship narrowly escaped being blown up.

In 1839, a brig, the *John and James*, was run into Malta in a sinking state, from lightning; which struck the spars and knocked a hole through her larboard side.

A packet ship, the *Toronto*, which sailed from London, with emigrants, in January, 1843, was struck by lightning at sea, in March

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following. All hands on deck were knocked down, one person killed, and the ship placed in great peril.

So lately as December, 1849, a large merchant ship, the *Flora Mure*, arrived in the Clyde in a crippled state from lightning. The fore-topsail was partially burned, foremast head carried away, the decks rent, and the planking in the side started fore and aft for above eighteen feet: the ship was with difficulty preserved from sinking.

The *Berlin*, laden with cotton, was struck by lightning on all her masts, off New York, in August, 1845, and set on fire; the fire was extinguished by the aid of two pilot-boats, after cutting up her decks.

The royal mail steam-ship *Medway*, with twenty passengers and 370,000 dollars on board, and a valuable cargo, was damaged by lightning, off the Campeachy Banks, in October, 1843, and placed in much peril.

In 1848, the mail steam-ship *Indus*, was struck and damaged by lightning in the Mediterranean.

These and a large number of instances which might be collected by a patient but necessarily laborious research, bear ample testimony to the terrible destructive agency of lightning as a source of shipwreck in every possible form. In fact there is no danger incidental to the perilous position of a ship on the great waters of the ocean, which this most awful element does not involve. So that there can be but little doubt, seeing the numerous instances in which ships are burned, sunk, or otherwise destroyed by lightning, that many missing ships, whose fate remains to this day in obscurity, except that they are certainly lost, have perished in an unfortunate moment by the electrical discharge; and how it happens, especially in these days of emigration and useful enquiry, that the question has received so little public consideration, it is difficult to say. At least half a million of money must have been lost in the cases of shipwreck, by lightning in the merchant navy to which we have just referred.

In many preceding numbers of the *Nautical Magazine*, will be found accounts of equally terrific cases of damage by lightning in the Royal Navy; from all of which it is clearly proved that many missing ships have perished by this cause of shipwreck. The *Peacock* sloop, according to a statement by the late Rear-Admiral Jackson, was certainly destroyed by lightning, on the coast of Georgia Carolina, in August, 1814. The following observations from the remark-book of the *Lacedemonian*, which he then commanded, are very interesting and important. "We found the wind during the months of August and September light and variable, with heavy squalls of thunder and lightning from the N.W., during which vessels are frequently struck and much damaged: we had two instances in our prizes. The Americans say that vessels are frequently lost on the coast during these months by lightning passing through their bottoms." The *Peacock* under Admiral Jackson's orders disappeared one night during a heavy storm of lightning. The *Redwing* disappeared, in 1822, in a similar way on the coast of Africa.

H.M. sloop *Squirrel*, struck by lightning on the coast of Africa, in

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August, 1805, not only lost her spars but was so damaged in the hull that the ship made eight inches of water an hour: one plank stove and all the caulking shook between the fore and main chains.

H.M.S. *Resistance* is said to have been blown up by lightning, in 1798, in the Straits of Malacca.

Is it at all surprising, after such verified and numerous instances of destruction by lightning, to find, out of eight of the old Halifax packets, that six disappeared, and of these no account has been ever received.

The systematic application of metallic conductors now employed in the Royal Navy appears to have completely obviated all these afflicting casualties in H.M. ships. In fact the only instances of damage by lightning in the Royal Navy found to have occurred in late years, have been in four solitary ships, in which, from some peculiar circumstances, the new system of conductors had not been carried out.

By despatches lately received by the Board of Admiralty, from Commodore Bruce, commanding at Lagos, on the coast of Africa, it appears that H.M. sloop *Waterwitch* had, on the 8th of June last, encountered a terrific storm of thunder and lightning. The electrical discharge struck the mainmast and passed out of the ship by the conductors, without any damage to the ship; several men were slightly affected by the shock. The Commander states, "Under Gods's providence, I feel that the safety of H.M. sloop on this occasion was due to Sir Snow Harris's admirable conductors." This, be it remarked, is the second time that this sloop has been so preserved from the severe lightning on the coast of Africa. The following is an extract from her log during the last commission. "20th June, 1849, 2h. A.M., a heavy thunderstorm; the ship struck by lightning; it passed down the main conductor and through the ship, furnishing another proof of the value of the conductors."

It is not unworthy of remark that within the present year two iron steamers, the *Jackall* and *Bloodhound*, on the same station, but in which the same system of conductors had not been provided, under a mistaken impression that it was not requisite in such ships, were both struck and severely damaged. The *Bloodhound's* spars were shivered and her sails burned.

If then it be thus very completely proved by the experience of many years, and by the great fact that all fatal damage by lightning has vanished from the records of the Royal Navy, ever since adequate means have been taken to parry the force of the electrical discharge, it is impossible not to contemplate such cases of destruction and loss of life as that lately recorded in the *Morning Herald* and *Times* newspapers, without feelings of the deepest and most painful regret. The Board of Admiralty, not insensible to the propriety of requiring all transports taken up to convey H.M. troops and stores, to be effectually defended from the destructive agency of lightning, came to a resolution, some years since, to require all such ships to be fitted with the permanent lightning conductors universally employed in the Royal Navy. The order, however, was overruled upon the ground that

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freights were very low, and the profit upon ships small, and that it would be unjust to compel shipowners to incur any expense in fitting their vessels with the permanent lightning conductors used in the Navy.

Before concluding these notices of shipwreck by lightning, it may not be unimportant to collect the instances to which we have called attention, together with some others not hitherto mentioned, under a tabular form, so as to exhibit at one view a brief summary of the destructive action of lightning in merchant ships, and form the basis of a history of such cases hereafter.

MERCHANT SHIPS DESTROYED OR DAMAGED BY LIGHTNING.

Ships totally destroyed.

Date.	Name.	Place.	Remarks.
3 Au. 1852	Maise	Off Malta	Spars shiverd and sunk, crew perished
1 My. 1849	Geo. & Mary	Off Scarboro'	Set on fire & totally dest. in a few hours
23 Jy. 1848	unknown	Off Boulogne	Consumed within sight of the coast
6 De. 1847	Robert Shaw	Ushant	Set on fire, driftd, & sunk off Portland
1846	Thomas Cope	At sea	Totally destroyed
25 No. 1845	Bayfield	Sierra Leone	Shattered and burnt
Ja. 1841	Sultana	China seas	Set on fire and burnt
16 My. 1840	Poland	Nantucket sh.	Destroyed
1839	Bolivar	South America	Struck and burnt
1 Ja. 1838	Ruthelia	At sea	Ltng. set fire to the cargo, & ship lost
1837	Lydia	At sea	Ship totally destroyed
1834	Sir Wr. Scott	Bay of Biscay	Total wreck & rapidly consumed by fire
19 De. 1832	Logan	Atlantic	Struck & destroyd, had 75,000 dollars
Jy. 1820	Tanjore	Off Ceylon	Lightg st. foremt. ship des. 2 men killd

Ships partially destroyed or damaged.

12 Jy. 1850	RMSt. Clyde	West Indies	Spars shivered
11 De. 1850	John Bryant	Cape Clear	Towed burning into Dublin & scuttled
De. 1849	Flora Mure	At sea	Hull shook, spars shivered
Ma. 1846	Bombay	At sea	Dangerously damaged
11 Au. 1845	Berlin	Off New York	Set on fire and nearly destroyed
19 Ju. 1843	Marian, trans	C. Good Hope	Troops on board, set on fire, 5 men killd
1 Ma. 1843	Toronto Em s	At sea	Much dmgd all hnds knckd dwn on dk
1 Au. 1843	MSt Medway	At sea	Spars shivered, had 75,000 dollars in
Ap. 1842	Malebel Bahr	China seas	Troops on board, severely damaged
30 Au. 1842	Defiance	China	Troops & combustibles, nrly blown up
21 My. 1840	Elphinstone	East Indies	Much damagd, 2 men killd, sails burnt
5 My. 1839	Madras	East Indies	Dmgd sevrly, hole knockd through side
2 Fe. 1839	John & James	Off Malta	Had a hole struck through side
20 Fe. 1838	Orwell	Atlantic	Struck and set on fire, nearly lost
Ma. 1828	M of Camden	At sea	Severely damaged
19 Ap. 1827	New York	Gulf stream	Ship much damaged and in peril

N.B. – The general tonnage of these Vessels averaged from 300 to 800 tons.

[We shall be happy to receive from any of our correspondents notices of remarkable instances of damage or destruction by lightning to merchant ships.—ED.]

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The Arctic Expeditions.

The following is a summary of the voyage of the *Prince Albert*, which arrived at Aberdeen on the 7th October.

The *Prince Albert* left Aberdeen on the 22nd of May last year, under the direction of Mr. William Kennedy. Made the ice on the 22nd of June, and crossed to the west side in 72° 30′ north latitude; got to Ponds Bay on the 24th of August, and there saw four natives, but found that they had heard nothing of Sir John Franklin. Proceeded up Lancaster Sound in heavy gales of east wind; reached Barrow Straits on September 4; found the passage stopped by ice. The *Prince Albert* then made for Port Leopold for shelter; here Mr. Kennedy landed in a boat, with six men, and was proceeding to make inquiries, when a barrier of ice got between the ship and the land, and the weather being still bad, with a strong current, the vessel was carried up Prince Regent's Inlet as far as Batty Bay, leaving Mr. Kennedy and his boat's crew on shore. Unable to return to Port Leopold, the *Prince Albert* tried to reach Fury Point, but did not succeed, and getting into Batty Bay, anchored, when M. Bellot left the ship with four men for Port Leopold on the 17th of October. Here Mr. Kennedy and his men had remained in a state of great anxiety for six weeks, subsisting on the provisions which were left by Sir J. Ross. Returning with M. Bellot to Batty Bay, the ship was housed for the winter, and preparations made for searching during the time she would be fast. They started with sledges on the 24th of February, with a party of 14 men, stopped a short time at Fury Point, crossed Melville Bay, got as far as Brentford Bay, and here discovered a channel, about two miles broad, leading westward, and opening up a bay by the western coast of North Somerset, continuing up this new channel, in 72° N. lat. and 100° W. long. Mr. Kennedy and M. Bellot continued northward, traversing the north coast of Somerset, round by Port Leopold, and regained the ship on the 30th of May. The direct distance from the ship to this channel would be 600 miles; the distance traversed was fully 1,200 miles. But in all this search, which included also a search of Cape Walker, no new traces were found of Sir John Franklin. During the time that Mr. Kennedy was out, Dr. Cowie, with a party of four men, crossed Cresswell Bay to the water on the west side of North Somerset, but was alike unsuccessful.

On the 6th of August last summer, leaving Batty Bay, the *Prince Albert* proceeded northward, intending to go to Griffith's Island; reached Beechy Island on the 19th of August, and falling in with the *North Star*, stationed with provisions for the use of the Franklin Expedition, learnt that the other vessels had passed up Wellington Channel. Mr. Kennedy deemed it useless to proceed further north, and determined to return home. At the time he left Beechy Island, Wellington Channel was open and free from ice as far as the telescope could command a view, and it is the opinion of Mr. Kennedy, as

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well as of the officers of the *North Star*, that from the remarkable openness of the season, the searching squadron would occupy a more advanced position than any of the previous expeditions could reach.

This little expedition, it will be remembered, was fitted out entirely at the expense of Lady Franklin, and, although it has not been successful in the main object of its search, the discovery of this new channel and the search of Prince Regents Inlet and North Somerset will tend to concentrate efforts now entirely on Wellington Channel as the only hope of discovering the missing expedition.

Arrived in London, Mr. Kennedy immediately reported his proceedings to their Lordships in the following letter, to which we have added dispatches with which he was charged from the *North Star*.

Admiralty-in-Waiting, Oct. 9.

SIR,—I beg to inform you of my arrival with the *Prince Albert* from the Arctic Seas, having reached Aberdeen on Thursday evening, at 6 P.M.

I left the *North Star*, Capt. Pullen, at Beechy Island, taking up her winter quarters. All well on board.

Dr. M'Cormick had just launched his boat in open water, with a party, I think, of four men, and was proceeding to Baring Bay, to ascertain if there was any opening to the eastward into Jones Sound, and with a view of examining the cairn and cooking place seen by the *Prince of Wales* in 1848.

I arrived at Beechy Island on the 19th of August, and quitted on the 24th.

Sir Edward Belcher, with one tender, the *Pioneer*, Lieut. Sherrard Osborn, had proceeded up the Wellington Channel, in open water, a few days previous to my arrival, while Capt. Kellett, with the other tender, Capt. M'Clintock, had gone in clear water up Barrow Straits, towards Melville Island.

The *Prince Albert* wintered in Batty Bay, Prince Regents Inlet.

In January, accompanied by M. Bellot, of the French navy, I proceeded with a sledge and three men, alike to visit Fury Beach and to form a first depot.

Returning to the ship, we again started in February, myself in charge of an advance party of five men, and M. Bellot, the week following, in charge of a party of seven men, having left Messrs. Hepburn and Leask in charge of the ship.

On M. Bellot coming up with me at Fury Beach, I found it necessary to send him back again to the ship, in order to bring down further supplies, and it was not until the 29th of March that we were enabled to proceed on the extended journey. A fatigue party accompanied us as far as Brentford Bay. Here we found an opening running in a general course of about south-west and north-east of about 15 miles to Cape Bird. On attaining Cape Bird crossed a bay of some 25 miles in width, when we struck a low-lying beach, and pursued our course on it over gentle undulations, in a direction due west, to the estimated distance of 100° W. long.

On the third day we got on flat table land, until the latitude of 73°

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N., when we turned east, and struck the inlet west of North Somerset.

Our course was now generally along the sea coast, until we reached Cape Walker, where our provisions compelled us to retreat to the ship, round North Somerset and Leopold Harbour.

I cannot find words to express my admiration of the conduct of M. Bellot, who accompanied me throughout this journey, directing at all times the course by his superior scientific attainments, and at the same time taking an equal share with the men in dragging the sledge, and ever encouraging them in their arduous labours by his native cheerful disposition.

During an absence of three months we slept in snow houses, having dispensed with tents.

With the blessing of God we returned in safety to our ship on the 30th of May.

On the 6th of August we cut out of winter quarters, and proceeded to Beechy Island as circumstances best directed.

I may mention that our first journey was in midwinter, when we had to avail ourselves of the moonlight, in the absence of that of the sun.

I have, in conclusion, the satisfaction to remark that, although our crew suffered somewhat from scurvy, they have all returned to a man in comparative health, which I attribute in a great measure to the strictly teatotal principles on which the expedition was carried out, and the consequent harmony and good conduct of the men throughout.

It is through the supply of pemmican alone, which the Lords of the Admiralty liberally supplied to the *Prince Albert*, that sledge journeys were enabled to be carried out.

I left 18 cases of pemmican at Beechy Island and two at Fury Beach, and four tons of coals I put on board the *North Star*.

During my absence on the extended journey, Mr. Cowie, the medical officer, searched the bottom of Cresswell Bay, to see if any passage existed there, but found none.

To this officer I also feel greatly indebted for his care and attention over the health of the crew, and kind and skilful treatment of them.

Though every search was made in all parts we have visited, we have found no record or trace of the proceedings of Sir John Franklin's expedition.

I have, &c.,

WILLIAM KENNEDY, Commanding Lady Franklin's Private Arctic Expedition.

The Secretary of the Admiralty.

H.M.S. *Assistance*, off Cape Warrender, Aug. 7.

SIR,—I have the honour to acquaint you, for the information of my Lords Commissioners of the Admiralty, that I reached this station today. On the 26th of July, owing to separation in fog, the *Resolute*, *Intrepid*, and *North Star*, taking an inshore lead, became entirely separated, but were in a better condition to advance than ourselves.

Therefore, before losing sight, made the several rendezvous—viz., Cape Dudley Digges, Cape Horsburgh, Cape Warrender, and Admiralty Inlet.

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On the 31st of July I called at and communicated with the natives at Cape York, and left documents for Capt. Kellett at the Cape extreme.

The same night I did the same at Cape Dudley Digges, desiring him "to follow on the other rendezvous," as his lead might clear him of ice at a more southern position, and he might not, without ruinous delay, be able to reach Cape Dudley Digges.

Having cleared the ice, and being uncertain whether our consorts might be ahead or astern, I made all haste to Cape Warrender, and expected to sight it on the 2nd of August. Strong currents and a strong gale drove us to the southward of Possession Bay.

On the 5th I endeavoured to land on that coast, but the swell, together with the loose ice, cast off by the late gales, rendered it impossible.

I then reached off to obtain smoother water on this coast, and shall endeavour to place this on Cape Warrender, moving on with all despatch to the final rendezvous at Beechy Island, where I expect to find the rest of the squadron.

As Capt. Kellett had with him the *Alexander* whaler, I trust he will have given a full account of his proceedings since parting.

All on board are well with but two trifling cases in the list, kept there to insure recovery of strength.

I have the honour, &c.,

EDWARD BELCHER,

Captain commanding Arctic Expedition.

To the Secretary of the Admiralty, London.

H.M.S. *Assistance*, Beechy Island, August 14.

SIR,—I have the honour to acquaint you, for the information of my Lords Commissioners of the Admiralty, that I reached this position on the evening of the 11th, where I had the gratification of finding the *Resolute* and *North Star*, the *Intrepid* having joined me in the Straits and towed me up.

2. I had despatched the *Pioneer* from Cape Warrender to examine Navy Board Inlet for information, and deposit the duplicate of No. 10, left at Cape Warrender; also to report on the state of the provisions, as in copy of instructions inclosed.

3. At Cape Warrender I found the cairn and post erected by Capt. Austin's expedition, but no document. The tally, having written on it, "Pull out record," was found beside the cairn, deeply impressed by the teeth of some small animal. No trace of the visit of man.

4. At Cape Hurd I found a document deposited by the *Intrepid*.

5. On the afternoon of the 13th the *Pioneer* returned from Navy Board Inlet, having searched for the provisions deposited by the *North Star*, but without success, as will appear by the annexed report of Lieut. Osborn.

6. Immediately on my arrival here, accompanied by Capt. Kellett, I proceeded with service parties, under the command of Commander Richards and Lieut. Cheyne, to examine closely Beechy Island and

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coasts adjacent for records of the missing expedition, but without the slightest increase of importance.

7. After a most laborious search, including the lines of direction of the head boards of the graves, and head and foot, as well as at 10 feet distances, and throughout the loose earth, no trace, nor even a scratch on the paint work, could be traced.

8. Upon very mature consideration, aided by Capt. Kellett and Comm. Pullen, I arrived at the conviction that no hurry in removing from these winter quarters can be traced. Everything bears the stamp of order and regularity; and although it is matter of intense surprise and incomprehensible to all, it is my firm conviction that no intention of leaving a record at this position existed.

9. Other reasons occur to me for such determination, the principal of which is, that Sir John Franklin would not consider this as a likely spot for inquiry, and it is evident that by mere chance only they happened to fall upon his traces. If I am asked why, my reply is, that at Cape Riley or any other more prominent and accessible positions, beyond the discovery of former visitors, Sir John Franklin would place his beacon; certainly not here.

10. It may next be inquired, why have the former searching parties failed to find these marks? My reply again is, look even to the cairns erected last year by the well organised expedition of my predecessors, they are easily overlooked, passed unnoticed, or destroyed by animals.

11. We have not been able, even with this very open season, to trace the large supplies left at Navy Board Inlet by the *North Star*, and no beacon marks their whereabouts. How, then, are the distressed to avail themselves of this depot?

12. Port Leopold is at present equally inaccessible, as reported by Comm. M'Clintock, who sought me in that neighbourhood. It is, therefore, a most serious drawback to any chances of relief that these depots should have been placed on the Southern shores of the Sound, when it is well known that the northern are always easily and safely accessible.

13. The shortness of the remaining season, and the vast importance of taking every advantage to benefit by the present open waters in carrying out the main instructions of their Lordships, by the two great channels, for the objects therein referred to, render it imprudent to risk any delay by further attempts to examine Port Leopold, which may be effected by Comm. Pullen during the winter or early in the spring, but a short journey, compared with those effected last year.

14. I enclose, for the information of their Lordships, copies of the instructions which I have deemed it necessary to give to Capt. Kellett and Comm. Pullen, which, I yet hope may be conveyed to England this season, should the *Prince Albert* touch here when released from winter quarters.

15. No trace whatever of that vessel has been found.

16. Comm. M'Clintock has just returned from examination of the ice in Wellington Channel, from which I have every hope of making

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successful progress this season. The current appears to run rapidly from it out of Lancaster Sound, charged with small floes. This current enters Union Bay, and sweeping round the spit of Beechy Island, (it is not a peninsula,) binds the ice in that bay and comes out under the floe to which the Squadron is fast with some velocity to the southward.

17. Yesterday, accompanied by Capt. Kellett and Comm. Pullen, I searched Cape Riley. The result of our examination, viewing it as a possible magnetic station, is most assuredly adverse to any such conclusion. As a magnetic observer myself, (Kellett and Pullen also,) I could trace nothing to warrant any such conclusion. Nor do I believe it probable that instruments of such a nature would be carried to a spot totally unprotected in every way, and not possessing any feature to recommend it, when the spot on Beechy Island afforded the best locality.

18. Another and very important reason adverse to any such selection, would be the almost vertical mass of mountains within a few yards of the position.

19. The circles of stones are clearly the remains of Esquimaux habitations, and flat paved circles in continuation towards the cliff clearly indicate not a temporary visit. Graves, also, of men and children, wherein the bones appear to have been charred, also indicate the resting place or fixed encampment of Esquimaux.

20. The station is also well adapted for a fishing position and for the capture of birds.

21. It is my firm conviction that had Sir John Franklin been disposed to leave any record of his movements, many very prominent points present themselves, and I have great hopes, from the very open season, that we shall yet find them on the shores of Wellington Channel.

22. I have great satisfaction in reporting my perfect approbation of the unanimity and zeal which inspires every one engaged in this trying service, and my conviction that one and all will do their duty.

23. I have the honour to inclose the state and condition of the vessels under my orders, and am, Sir, your most obedient servant,

EDWARD BELCHER,
Captain, commanding Arctic Expedition.

The Secretary of the Admiralty.

By Captain Sir Edward Belcher, C.B., commanding the Expedition in search of traces of Sir John Franklin and his Companions.

By a printed copy of the instructions under which I am proceeding, and furnished you in my letter containing the original rendezvous, &c., you will be already fully informed of the station to be allotted to the *North Star*, under your command.

That is, to remain as depot at Beechey Island, until you receive further instructions from me, or from any other, your superior, for your further guidance.

You will be supplied with copies of all instructions furnished to

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other Officers in command, and you will cause copies to be made in order to transmit them to England, should any opportunity offer.

During this season you will despatch two sledge parties to form depots on the east side of Wellington Channel, preparatory to more decided exploration of North Devon, Jones Sound, and the land northerly, in the spring of 1853.

On both these explorations you will give the direction of one sledge, or both sledges, to the Surgeon, Mr. M'Cormick, who has been expressly selected and appropriated for this duty, and you will afford every facility for this enterprising volunteer.

On the other two, which will probably accompany him as far as Baring Bay in the spring of 1853, I must leave the command to your own discretion.

But you must clearly bear in mind that the two last must not be allotted to any extended journey, which may risk the requirement of the *North Star* for immediate service in the summer of 1853.

During the remainder of this season you will employ your artificers in constructing a compact house for the shelter of 60 persons, if possible, in the event of accident rendering it necessary to despatch the *North Star* to England.

You have already timber sufficient saved from wrecks, and until the Squadron separates you will receive every assistance from it. In the event of the *Assistance* making successful progress this season towards or into the Queen's Channel, you will despatch one sledge party to meet one from the *Assistance* in the spring of 1853.

You will instruct the Officer in charge to call at Point Philip, Baillie Hamilton Island, Dundas Island, or Cape Becher, unless he should have reason to know that the ship is on Baring Bay side of the Wellington Channel The date at which the parties under Capt. Austin's expedition moved was about the 18th of April. Our party will be instructed to reach one of those stations on the 11th of May. If earlier, account will be left with a tall staff and flag attached. Letters and documents will be deposited in a cask, and having removed them you will place yours in a similar.

If it should be elevated above ten feet, you will instruct the person charged with this duty to climb to it and take out the papers, instead of pulling it down, and risking the possibility of its destruction.

Given under my hand, at Beechey Island, this 14th day of August, 1852.

EDWARD BELCHER, Captain.

Commander Pullen, H.M.S. *North Star*.

H.M.S. *Resolute*, Beechy Island, Aug. 14.

SIR,—I have the honour to inform you that on the 11th instant Messrs. Domville, Alston, and myself, walked to Caswell's Tower. At the foot of it, facing the south-east, and about 300 yards from the beach, we found the remains of an old Esquimaux encampment, consisting of about 30 ruined huts. One of Edwards' small potato cases attracted our attention, and on searching we discovered several of

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Goldner's preserved meat canisters, seven or eight wine bottles, a fireplace, and a small well; the bottom of it was lined with small stones. A pathway of large flat stones led to the well. No cairns nor documents were found. These articles evidently belonged to some of Sir John Franklin's parties; most probably a shooting party. I then ascended the tower, which is about the same height as Beechey Island, but much steeper. Neither cairns nor documents were found. Five bears were seen during our walk; one of them was severely wounded by Mr. Domville. The land was very barren; a little moss and sorrel was the only vegetation seen.

I have, &c.,
R. VESEY HAMILTON, Lieutenant, R.N.

Henry Kellett, Esq., C.B., Captain, H.M.S. *Resolute*.

Screw Discovery-vessel *Isabel*, Aug. 12, 1852.
Godhaven, Disco, Greenland.

SIR,—The assistance I have received in so many ways from the Board of Admiralty in equipping my little vessel for her Arctic voyage induces me to suppose their lordships will be pleased to learn I have so far advanced on my voyage, and that the squadron under Sir Edward Belcher passed this port on the 12th of June, having left it on the 10th, and finding the Waigatt Passage blocked with ice returned southward to take the open bay.

I shall sail in a few hours, having only put into Godhaven to make good some losses sustained in a gale off Cape Farewell.

I am now (from the favourable appearance of the season and the opinion of those here as to the state of the ice northward) determined on proceeding direct to Smith Sound.

No ships having been seen returning southward from Melville Bay, it is presumed that they have been successful in making an early north passage.

I am, Sir, your obedient, humble servant,
(Signed) E. A. INGLEFIELD, Commander R.N.

To the Secretary of the Admiralty, London.

The foregoing gives a most gratifying account of the progress of Sir Edward Belcher's expedition, and the very satisfactory intelligence that the season has been remarkably open, so that the ships appear to have met with little or no difficulty in their progress northward. We may, therefore, consider them to have reached that interesting point, Capt. Penny's furthest, and that the *Assistance* and her tender are in their winter quarters, not very far from the Hamilton Islands of the Wellington cCannel; and the *Resolute* at her station at Melville Island, waiting the meeting in the spring at the appointed rendezvous in lat. 77° N., long. 105° W.

But as yet nothing new, excepting Mr. Kennedy's discovery, has been added to our previous knowledge on the subject, further than the open season, and we are left for another interval of uncertainty, until we receive further despatches next year, the nature of which we may each

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of us anticipate according to that theory which to each appears most probable.

We hope, in another number, to preserve some further letters from the expedition, that our space denies us room for at present.

East Hartlepool Underground.

Thursday I devoted to Hartlepool, or rather the two Hartlepools, for there are an East and West. The former, with its docks and railway, is leased to the York and Berwick Railway Company; the latter is under the control of the Leeds Northern ditto. Both are doing well, and promise to do better, to the benefit of the public in general; but as "amalgamation" is the *mot d'ordre* of the day, overtures have not been wanting here with this object, at least so I was told; whether the scheme will ever be carried out remains to be proved.

You probably know the history of these docks. Commenced in 1832, the enterprise of a few men, principally coal owners, driven by the monopoly of Sunderland and Shields to seek a new outlet for their produce, has succeeded in creating a port, which may vie with any on the coast for the convenience it offers to shipping. The Lord of the Manor, the Duke of Cleveland, *gave* the land; and half a million of money, judiciously expended, has converted barren sands into a capacious harbour*, and turned a little dirty fishing village into a respectable seaport.

How well I recollect my visit to this place, from Redcar, in 1823; then the church stood conspicuous as a land mark on the bit of cliff which juts out a few hundred yards beyond the beach, and not a house interfered with the view of its hoary steeple; now, its weather beaten battlements are almost concealed by the buildings that have sprung up on all sides, and the crest of the cliff is surmounted by a very handsome lighthouse, which exhibits two beautiful lights, on the French principle; one is a harbour light of the fifth magnitude; what changes have not taken place in the last twenty-nine years!

The population of East Hartlepool is about 10,000; and they ought to be very good people, if we may be allowed to judge from the number of places of worship. The following list of them was given me by my cicerone: I thought it worth making a note of. 1, Primitive Methodist, built 1851; 2, Baptist, built 1851; 3, Wesleyan Methodist; 4, Wesleyan Reformist; 5, Wesleyan Associanist; 6, Independant; 7, Presbyterian, built 1840; 8, Roman Catholic, built 1851. The latter stands in immediate company with the evidently sadly neglected old Parish Church; and a handsome spire, to my intense disgust, "like a tall bully," never ceased the whole day clanging a *peal of eight bells.* Why does not some good Protestant indict them

* See our last number.

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as a nuisance! There is also a congregation of Latter Day Saints, but they have no public place of worship.

The Docks were full of shipping; there was a good sprinkling of foreign vessels, two fine ships, a Russian and Hamburgher, had been to the East Indies, and were outward bound again.

One of the two building slips was occupied by the keel of a fine vessel intended for the foreign trade; and a schooner and steamer were undergoing repairs on patent slips. A couple of Dutch galliots and about a dozen English brigs and schooners were towed out by little handy tugs, while I was there. Such is Hartlepool senior, this year only emerged from its teens: and Hartlepool junior, is bidding fair not to be left behind long; there were not quite so many ships in its docks, but I noticed a nice screw steamer just returned from Hamburgh, whither she had conveyed a cargo of Manchester piece goods; Great Grimsby had better look out!

Then again the aborigines, the fishermen, have benefitted not a little by the change; a very intelligent young man told me there were upwards of a hundred more hands employed in the herring fishery, than when he first went out to assist his father, but gave a hearty growl at not having now any place to spread the nets upon to dry, without paying for the accommodation. He told me also what I have since seen verified in the *Times*, viz, that there was a French man-of-war steamer on the coast, and two Sunderland steam tugs, hired at £4 a day each, to watch the fishermen and see they did not buy their herrings, wherewith to claim the bounty. Very few French boats have come out compared with former seasons, because the government require to qualify for receiving the bounty, that boats which formerly carried twenty-five men should carry forty now, and those which carried fifteen before, twenty-five now.

I was occupied the whole of yesterday, from 7h. A.M., in visiting the collieries of South Hetton and Murton, and the port of Seaham.

Through a very kind fellow traveller I obtained an introduction to Mr. Foster, a director of these mines residing in Durham, and he sent an order to his superintendant, a Mr. Matthews, to show me the works.

The South Hetton and Murton Collieries may be reached from here by bus and rail, in about an hour and a half, they are distant from Seaham, their port of shipment, the former about four miles, the latter two, and a railway, by which the coals are carried, connects them all three together.

They are worked by a company, who employ, officers included, about 1,400 hands. There are five pits, which, in full work, produce 320 chaldrons a day. At this moment two pits are standing still, and the other three are only working two thirds of the time, owing to the want of shipping to carry away the produce, caused, probably, by a glut in the London market, which prevents vessels discharging.

The working shaft at South Hetton is 360 yards deep, that at Murton 500 nearly (246 fathoms is the exact depth). It was the latter pit I descended.

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Having stripped and put on a miner's dress, supplied me by Mr. Matthews, consisting of a coarse flannel shirt and drawers, worsted stockings, stout blue jacket and trowsers, and leather cap, I got into the basket or cage with Mr. M., and Mr. Hedley, the engineer of the mine. We were lowered by an engine, and the descent occupied exactly two minutes; a slight pressure round the ears was the only inconvenience I experienced: I believe some people feel this more than others, which is not surprising. The barometer, at the surface, stood at 30·15 inches; in the pit, at 31·30 inches; or an increase of atmospheric pressure of more than an inch in two minutes!

We were now in the working shaft which extends full two miles in a westerly direction. About twenty yards below this shaft, or 256 fathoms below the surface of the ground, there is another shaft, but the seam is only twenty-eight inches thick, and is not considered worth working. After a few minutes delay, to get our lamps lit, we went to the shaft where the coals were being drawn up by the engine; the shaft is only used for this purpose. Thence, after watching the waggons, full and empty, going and returning on a railway, worked here by horses, and examining all the ingenious contrivances by which labour in this portion of the pit is economised, we went to the stables, which are kept beautifully clean and sweet. Here were stalls and loose boxes for eighty horses, the number actually employed is seventy-four, they work watch and watch, twelve hours at a time, and though they never see daylight, poor brutes, they seem in excellent condition.

From here we went to the engines for working the railway in the shaft by ropes. Two small locomotives of 15h.p. each, are used for this purpose; they work at a pressure of 40lbs. on the square inch, and I was shown the arrangements for supplying the boilers, and for the exhaust, which, it is needless to say, were admirably contrived. Some hewers were at work not far from this, so I was saved the trouble of going nearly four miles to see the seam worked.

We now lit the Davy's carefully to prevent the chance of accident, and entered the waste shaft, or passage for the return of the air after it has done its duty in ventilating the mine. The fresh air in the working shaft could be heard from here, through the doors, roaring like the rushing of mighty waters; and the thermometer, as well as the sickening sensation caused by inhaling an extra quantity of carbonic acid gas, showed too clearly the state of the atmosphere we were in. At the bottom of the shaft the thermometer was 62° (it is never below 56°) here it was 71°. This foul air is drawn out of the mine by two enormous furnaces, kept perpetually fed; 15,000 cubic feet of air are drawn through these furnaces per minute: an uptake shaft carries it off, and the thermometer in this uptake, at the surface of the ground, stands at 198°. Ventilation is all important, and immense expense is entailed on the management of this and similar undertakings. The expense of ventilating these two collieries is upwards of £3000 a year, and it requires the constant and undivided attention of fifty men.

Murton Colliery is drained by an engine of 300 h.p., diameter of

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cylinder 84 inches, length of stroke 10 feet. I never saw sneh enormous masses of iron as the sway and rocking beams which work the spears. I was not sorry to return to the surface of mother earth again, (the ascent occupied exactly the same time as the descent,) and getting into a light car on the railway, a horse trotted us off to the top of a hill, from whence we rattled down an inclined plane into Seaham. Here I received the greatest attention from the harbour-master, although I must have been a pretty figure, being still in my miner's rig. The place is well worth a visit; I walked all over it, and was perfectly astonished with the arrangements for economising time and labour. The increase of Seaham has been almost unprecedented; upwards of 70 vessels have been towed in and out in a single day (between 30 and 40 yesterday); its establishment and success are proofs of what may be done by capital and enterprise well directed.

Returned to South Hetton by the railway, and was glad, after a good wash, to resume my own clothes; and after enjoying Mr. Mathew's hospitality, got back to Durham at 7h. 30m., P.M., very well satisfied with my trip.

THE OBSERVATORY TIME BALL.—*Cape of Good Hope.*

The signal ball is five feet in diameter. It slides upon a rope attached to an arm projecting from the flag-staff at the height of 45 feet from the ground, and commands the outer anchorage in clear weather; but close in, particularly from the decks of small craft, the line of sight is interrupted by windmills and houses.

No alteration has been made in the position of the flag-staff since it was first established; which position is the least objectionable to the sweep of the astronomical instruments, compatible with the command of the harbour. Otherwise, the staff might be placed to the north-west of the Observatory, so as to almost entirely clear the windmills and houses before-mentioned. The removal to the north-west is now under consideration; but it is proper to remark, that no arrangement at the Observatory can obviate the relative interruptions caused by the masts and rigging of a group of vessels at the anchorage. This could only be met by a less distant, and particularly by a more elevated, position for the signal ball than the ground about the Observatory can furnish.

The signal is made daily, Sundays and Good Fridays excepted, (and contingent exceptions that will be noticed presently,) at one o'clock, Cape mean time, corresponding to 11h. 46m. 5s. Greenwich time: and its precision is tested by an observer stationed at the Normal mean time clock. An examination of the registered times of drop, since the beginning of this year, shows that the probable error has been reduced from about two-tenths of a second in time, to one-tenth part of a second in time. There is, therefore, an equal chance that the signal may happen one-tenth of a second too early or too late. This degree of accuracy is more than sufficient for the wants of the seaman, whose ordinary method of noting time admits of no such precision.

Furthermore, with regard to the fountain from which the time for signal is derived, it may be well to record, that when the sky is clear, the error of the transit clock (which checks the Normal clock) is determined by astronomical observation as near to the time of signal as is practicable.

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The contingent omissions of the signal since the 1st of January were as follows:—March 12, March 22, May 18, June 7, 8, 9, 10; and for these reasons, viz., on four of the days the signal would have been useless, because it could not have been seen from the harbour, owing to the state of the weather; on the 12th of March, the establishment was engaged upon a more urgent duty; and on the other two days the transit instrument was under repair.

The chief object of this communication is to establish certain facts, of which there seems to be a very indistinct perception.

Royal Observatory, July 7, 1852. THOMAS MACLEAR.

MAGNETIC VARIATION.

The great importance of preserving for the readers of the *Nautical* an authenticated record of the variation of the compass in England, has induced us to collect from some of our preceding volumes the notices of it with which we had been obligingly favoured by the Astronomer Royal, from the Greenwich Observatory. By the considerate attention of Mr. Airy, we are enabled to add to the foregoing the mean results for the remainder of the year 1843, and hope in successive numbers of our work to be enabled from the same high authority to record these interesting elements down to the present time.

	Variation W.			*Dip*	
1841	°	′	″	°	′
Oct. - -	23	12	18	68	39
Nov. - -	23	17	7	68	31
Dec. - -	23	11	5	68	24½
1842					
Jan. - -	23	11	54	68	44
Feb. - -	23	15	23	68	41
March - -	23	10	39	68	30
April - -	23	11	0	68	37½
May - -	23	11	39	68	45½
June - -	23	14	5	Out of rp.	
July - -	23	17	14	68	36½
Aug. - -	23	15	10	Susp.	
Sep.					
Oct. - -	23	18	4		
Nov. - -	23	17	22	68	58½

	Variation W.			*Dip*	
1842	°	′	″	°	′
Dec. - -	23	17	22	68	57½
1843					
Jan. - -	23	11	31	68	59
Feb. - -	23	9	56	68	59
March - -	23	7	17	69	0
April - -	23	4	48	69	0·5
May - -	23	6	10	68	59·8
June - -	23	12	31	69	1·8
July - -	23	11	18	69	0·9
Aug. - -	23	11	21	69	0·7
Sep. - -	23	16	31	69	1·9
Oct. - -	23	16	12	69	2·1
Nov. - -	23	15	50	68	59·6
Dec. - -	23	17	3	69	0·5

G. B. AIRY,
Astronomer Royal.

THE ANCHOR TRIALS AT SHEERNESS.

The following account of these interesting trials recently appeared in the *United Service Gazette*, a correct description no doubt, not only of the manner of conducting them, but of the results obtained by the several experiments.

Having had some practical experience of the properties of three of the competing anchors, and during the most severe weather, (which we consider far more satisfactory than any experiments that can be made on shore, or even afloat by means of dock-yard lighters, aided by steamers, however fairly and impartially they may be made,) we have long ago formed our opinion as to their respective merits; and in these pages have freqently expressed it as favorable to that of Lieutenant Rodger, which we consider superior to

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any other anchor we have seen. We have also reason to believe that it is a favorite anchor with practical seamen, both in the Royal Navy and in the merchant service, but especially in the latter, from the circumstance of its being there in more general use than in the former.

But we are not, by our recommendation of it, for anticipating the report of the Anchor Committee, who are doubtless giving the subject all the consideration which its great importance demands, for every seaman knows, that a really efficient bower anchor should bite quickly, and hold well in all kinds of anchorage; that its form should be such as not to render it liable to get "shod" in stiff clay or chalky ground, as is the case with anchors of ordinary construction; that it should possess great strength in *every direction*, to enable it to resist those sudden jerks and strains, to which anchors are liable in open roadsteads during heavy weather; and that it should be convenient for "fishing," "stowing," and "sweeping;" and so simple in its construction as to insure sound workmanship, so as to be not easily damaged; for on these qualities the safety of a ship, with much valuable property, and above all many still more valuable lives frequently depend. The account we have referred to says:

"We have been anxiously watching the issues of the trials of anchors at Sheerness; and as they are now concluded, with the exception of testing their mechanical strength by the hydraulic press, we are desirous to place the matter fairly before our professional readers. Every seaman knows the vital importance of a good anchor. How many anxious hours have been spent in watching the holding powers of an anchor, and how many lives have often depended on the issue!

"Previously to the introduction of Lieutenant Rodger's small palmed anchor, ships were supplied with heavy, cumbersome contrivances, with long shanks and broad palms extending half-way up the flukes. So badly were they proportioned that it was no uncommon thing for them to break in falling on the bottom, particularly if the latter were rocky. But if once firmly imbedded in stiff holding ground, there was considerable difficulty in breaking them out. The introduction of the small palm, therefore, forms an important era in the history of anchors. The next important introduction was Porter's anchor, with moveable flukes or arms. One grand object sought to be attained here was the prevention of fouling by the cable. It was considered also that as great injury was frequently occasioned by a ship grounding on her anchor, the closed upper arm would remedy the evil. It was found, however, that the anchor would not take the ground properly as at first constructed, and hence the "shark's fin" upon the outside of each fluke. For a time Rodger's invention was viewed with great distrust. The idea that it would be easily drawn through any but the hardest mud was, however, quickly discarded by the results of experiment, and from time to time improvements have been introduced, until at length the new patent was brought out which gained the Exhibition prize. The original Porter's anchor has also undergone considerable modification; and, under the name of Trotman's anchor, has taken a conspicuous place in the late trials.

"Another invention is that of Mitcheson's, which in form and proportions strongly resembles Rodger's; but the palm is that adopted in Trotman's or Porter's anchor. It is a trifle longer in the shank than Rodger's, and has a peculiar stock which, although original in its form, lacks originality in its design; since Rodger had previously introduced a plan for an iron stock to obviate the weakness caused by making a hole for the stock to pass through. Lenox's anchor differs from the new Admiralty anchor, chiefly in being shorter in the shank and thicker in the flukes, the palms being spade-shaped. Another contrivance is that of Mr. Jonathan Aylen, Master Attendant of Sheerness dockyard. This officer, apparently hoping to rescue the Admiralty principle from utter supercession, copied the anchor in most of its features; but, instead

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of the inner part of the fluke from the crown to the pea being rounded, as in the Admiralty plan, and squared, as in Rodger's and Mitchenson's, it is hollowed. Isaac's, or the American anchor, is a very complicated affair. It has a flat bar of iron from palm to palm, passing the shank elliptically on both sides, and from the end of the stock to the centre of the shank, two other bars are fixed, intended to prevent its fouling.

"Having thus described the contending inventions, we may briefly state the methods adopted for testing them. The first took place in a prepared bed of sand in Woolwich Dockyard. There were two pair of moveable sheers erected, with a large single block suspended to each by a tackle for tricing up or lowering, as required. Through the large blocks two 15-inch pendants were rove, to the end of each of which were attached three-fold purchases, their falls bent to another pendant, connected to a two-fold purchase, the fall of which was brought to a capstan. The results of this ingenious mode of testing are not, however, considered of much value, and we proceed to the more important series of operations at Garrison Point. Here the anchors were laid out at low water mark, and purchases similar to those above described applied, chain pendants being substituted for rope. This being also a trial in which little else than the actual superficies were of avail to prevent the anchor being brought home, was also, to a certain extent, indefinite. It is probable that, had one of the original anchors with the large palm been among the competitors, it would have shared the honours of the day. The third series of operations took place at Blackstakes, in the Medway. Here a dockyard lump was secured to a line-of-battle ship's moorings in nine fathoms' water. A single block, which we will call a "monster block," made for the purpose, was slung over the bows, through which was rove a bridle consisting of 25 fathoms of 1⅛-inch chain. To each end of the bridle or span an anchor was shackled. The anchors having been let go, a strain was hove upon the monster block by means of a three-fold purchase, the fall of which was brought to the capstan. The results we annex.

"The fourth series of experiments took place at the Nore. A Dockyard lump was placed between two steamers, one of 90 the other 100 horse-power. The trial anchors were on the off bow of each steamer, and having been shackled to the ends of a chain bridle 36 fathoms in length, they were dropped simultaneously about fourteen fathoms distant from each other. The bridle was rove as before through the monster block. When the anchors were let go, therefore, there were 18 fathoms on each side of the block, which block was secured to the lump between the steamers by a chain pendant 25 fathoms in length, the same size as the bridle (1 5-8th in.) brought over the lump's davit, and secured to one of her main beams. This was for the long stay trial. For the short staytrial the monster block was just above the water's edge. The depth of water was 13½ fathoms, the bottom being mud and sand. When the anchors were let go and the chain paid out, the steamers backed their engines at full speed, until brought up by the anchors; and this process was repeated at long and short stay until one anchor came up. The velocity over the ground with the tide averaged between three and four knots.

"The latter trials being the more legitimate and conclusive, we will dismiss the three former trials and detail as well as we are able the finishing series. On Friday and Saturday, the 17th and 18th of last month, there were two trials of the standard anchors, the competitors on the first occasion being Rodger and Aylen. At long stay no difference was discoverable, both held exceedingly well; but at short stay, after two severe strains Rodger's gave way, and came up to the block. Mitcheson's was then tried against Trotman's, and at long stay both held so well as to defy the power of the steamers. At short stay the same results were obtained; but on a second trial Mitcheson failed, one part of the stock having broken at the shoulder.

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It may be remarked in this place that the stock is in two halves, having a plate at the inner end, the breadth of the upper part of the shank. These plates fit into grooves dovetailed at the lower part, and secured by a bolt forelocked, and at the top part the bolt which secures the shackle or ring of the anchor passes through the plates. The upper surface of the stock being flat, offers considerable resistance when lying on the bottom; but it is much too slender for a working anchor.

"On the 24th another trial took place between Aylen's and Rodger's, it having been a tye hitherto; but this was decided in favour of the latter. Lenox's anchor was then tried against Rodger's, when the latter was beaten. Mitcheson's was then tried against Trotman's and beat, after which Mitcheson beat Lenox's also. The four anchors selected as the best therefore are Mitcheson, Trotman, Lenox, and Rodger. It now remains to be seen which anchor will bear the test of mechanical strength.

"The general opinion deduced from the series of experiments is, that although Mitcheson's has been so successful the stock is not at present seaworthy. Trotman's has come out of the trials very successfully; but the construction is too complicated to render it a good working anchor. When once in the ground its holding properties are very superior: in fact, a glance at its grasp will show that it has the capabilities of an anchor of another construction one fifth larger. There, are, however, drawbacks not easily to be overcome. Its taking the ground is more precarious than with other anchors, and if a ship should part her cable, it would be scarcely possible to sweep the anchor. It is an awkward anchor also to fish and to stow. Yet there are other merits which render it upon the whole a most valuable invention, and no ship should go to sea without one. Of Lenox's it is sufficient to say that it has been found equal to, and that it has gained an advantage over Rodger; but so strong is the professional feeling in favour of the latter, that it will ever remain a favourite. Our recommendation would be thus; Lenox and Rodger for bower anchors, Mitcheson for a sheet, and Trotman for a spare anchor.

"The following gives at one view the result of the experiments in breaking the trial anchors, and the time occupied upon each experiment:—

Anchors.	Weight.			Proof Strain.	1st Crack.	Broke.	Time in Breaking.
	Ct.	qr.	lb.	Tons.	Tons.	Tons.	Minutes.
Lieutenant Rodger's	19	0	8	19⅞	45	73¼*	21
Brown and Lennox's.....	20	3	14	21⅛	44½	47	7
Isaac's.....	21	0	14	21⅛	58	63	10
Trotman's	21	1	10	21⅛	51	53½	18
Honiball's	20	3	7	21¼	54	75½	42
Admiralty's.....	20	2	6	21¼	40	56½	26
Aylen's	21	1	0	21⅛	44	47½	6

To the above we may add, that the usual test for the largest anchor used by H.M. ships, is only 67½ tons, and weighs 100 cwt; and that on Lieut. Rodger's improved plan, weighing 19 cwt. and 8lbs., bore 73½ tons as above stated.

Its shank, no doubt, is much bent and cracked in several places, but the arm does not appear to be altered in its form, or at all injured; and although the cracks in the shank are numerous, and extend over a space of about 18 inches, within about 3 feet of the arms (showing its uniform strength,) still they are very slight; and it seemed to be the general opinion that, had the shackle not given way, the anchor would have borne a much greater strain without breaking.

* Rodger's anchor did not break; the shackle having given way. Mr. Mitcheson declined submitting his anchor to the test.

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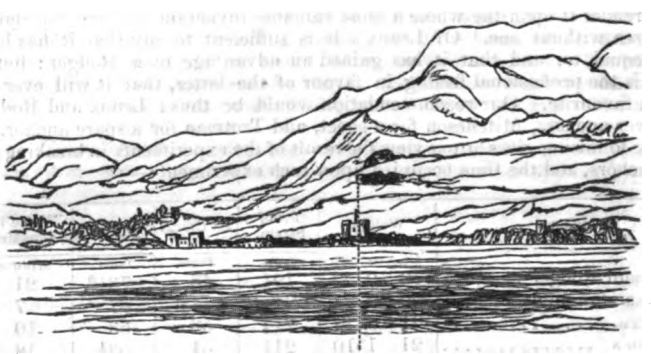
Nautical Notices.

Alterations in the Marks of the Channel of the Bay of Smyrna.

H.M.St.V. *Spitfire*, Smyrna, 26th August, 1852.

Sir,—Having since my arrival at this port on August 13, been enabled to examine the light off the mouth of the Hermes, upon which a beacon was placed in 1842, and having ascertained that it has considerably grown out by the depositions from that river since that time, I therefore felt it my duty as early as possible, to inform you of the fact for the benefit of merchants and captains interested in the navigation of this gulf. And to point out to them that the marks given in a copy of a chart of the "Channel of the Bay of Smyrna," by Capt. Graves and the Officers of H.M.S *Beacon*, which was then published at this port, viz., "The North end of the old Castle on Mount Pagus on with the South end of Lanjac Castle clears the Hermes spit," *is no longer true*. The spit having grown out beyond those marks, it is now necessary to substitute the following for the former marks.

A large and conspicuous Tree, with a house under it, (which appears to the South of Lanjac Castle,) on with the North end of the old Castle on Mount Pagus. This latter object will in consequence be more than twice its breadth open to the South of Lanjac Castle instead of touching it, as by the old marks. I subjoin a sketch, to render the objects more easily recognised.



N.B. This spit is the only one of such rapid increase as to sensibly affect the navigation of the Channel in a few years. But it is one of least danger where a proper look out is kept: since the reeds growing on the lips of the river are within a cable's length of the extremity of the spit; and the shallow bar is generally seen to break; or with trunks of trees aground upon it.

As the other spits extend some distance from dry land, they are not so easily indicated; the marks for them being very distant and indistinct. It is, therefore, the more to be regretted, that the buoys formerly placed upon those spits by the subscription of some few merchants, have been entirely removed, through the apparent want of interest or care about their preservation by the local authorities. The consequence is, that many vessels now ground upon these spits; much loss of time and expense follows; which often is far more than would be the cost of replacing and maintaining such necessary guides to a great commercial port.

Finding that notice of their entire removal is not generally known, strangers arriving at the port of Smyrna are thus often placed in a difficulty.

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To the Editor of the "China Mail."

Hongkong Harbour, 30th June, 1852.

SIR,—Although the enclosed remarks were written during my late passage out, and were intended for the *Nautical Magazine*, to which I am a subscriber, and sometimes an humble contributor, yet being at a distance from the Editor of that valuable periodical, I hope it will not at all derogate from its utility, that this communication appears first in yours.

I passed Ferro, the southernmost of the Canaries, on February 24th, 1852, bound to Hongkong and Canton; and conceiving it a proper month, shaped my course eastward of the Cape Verde Islands, keeping in 19° 45′ W. long., crossing the parallel of Cape Verde on the 29th February. Now, comparing the present with my last voyage to India in December, 1850, I have every reason to be satisfied with the eastern route; for although a lighter trade, I gained so much in distance, that I passed the lat. of Cape Verde in rather less time than when, in December, 1850, going west of the Islands. After getting about 200 miles south of Cape Verde, the wind veered to E.b.S., with which I was enabled to steer S.S.W. (S.¼W. true); whereas, on my former voyage, with the wind from the same point, I was obliged to steer S. and S.b.E., consequently close hauled, as I should have been this time, instead of all stud sails set on the port side. All other things equal, the fewer zigzags in a passage the better; and supposing the winds to be as good in this track, there is much gained in the distance, as a ship may steer a *direct* course from the Canaries to the Equator. I have compared Horsburgh, Purdy's Memoirs, the *Nautical* (i.e. Horsburgh the younger) with my own limited observations, and cannot see why the route to the westward of the Cape Verde Islands should be *always* considered best. I had an opportunity of convincing myself to the contrary when on my homeward passage from Canton; November 2, 1851, I crossed the line in 20° W., on the 15th was on the parallel of St. Antonio, and in long. 29° W., where I had light variable winds thence to lat. 30° N., veering from S.W. to S.E. Surely I was far enough west to have a true trade.

I would also suggest, that, for a ship outward bound in all December and March, and going east of the Cape Verde Islands, there is another advantage to be gained, viz., the course will not only take a ship straight from the Canaries to the Equator, but will also enable her to cross it more to the eastward. Is it any advantage to do so? I should think it is, from the month of February to July inclusive; first, because in these months a southerly wind prevails on the coast of Brazil; and second, because the further to the eastward the less easting to run down after losing the S.E. trade; in other words, *the track is less circuitous* to the Cape of Good Hope. There can be but one opinion as to the eligibility of this track in every respect save one,—*the winds*. Now I should much like to know if the notion of carrying better winds when crossing the line in 25° W. long. than in 18°, be correct: for I must again remind you that it is for information I write, and not to thrust my own opinion down another's throat. If I seem to speak a *little* too positively, it is in order to provoke to sound argument on the opposite side.

On inquiring of others why they go so far west, the answer invariably is, that they have tried *both ways*. This may be, but it is not satisfactory; for this simple reason, they have never tried both ways on the same *day, week, or perhaps month*, and consequently there is no proof but that at *the time* they were crossing, say in 25°, there were not equally good winds in 18° W. longitude. Now if I were to arrive at China with a ship that had crossed 6° or 8° farther west than myself, and saw by her log book that it had happened on or about the same day, and that she had better winds, and should this be

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corroborated by subsequent and similar proofs, I should willingly give up my present opinion. An immense mass of information might be obtained by comparing the log books of different ships on the same voyage, and at the *same* dates and different positions to state the direction and force of the winds. This would reduce probabilities to absolute proofs, nor would it require a very long series to arrive at the desired end. Suppose every ship were to deposit her log book, on arrival in England, for a limited time while she is lying in dock; or, which is more practicable, if every master would take the trouble to write on a sheet of paper the latitude and longitude of each day, from the Canaries to the 10th degree of South latitude, giving the direction and force of the winds, and on his arrival transmit it to the publisher of the *Nautical Magazine* to be arranged in order, much might be done to set this question at rest.

Leaving this to better hands, I subscribe myself at present,

A NOVICE.

P.S.—As example is better than precept, and as I do not desire to be thought too indolent to furnish my mite of information, I send you the following particulars of the currents experienced between certain limits, on my last voyage:—

Date.	Latitude.	Longitude.	Currents in 24 Hours.	Winds, &c.
1852.				
Mar. 4	7°02′ N.	20°19′W.	S. 66° W. 17 miles	Lost N.E. trade
5	5 48	20 20	S.b E. 20 m.	Northerly, light
6	4 33	20 20	S. 12 m.	Light airs northerly
7	3 19	20 03	S. 41° E. 15 m.	E.S.E. nearly calm
8	2 45	19 29	N. 71° E 35 m.	Variable, calm, and heavy rain
9	2 15	19 06	E. 15 m.	Light and variable
10	1 42	18 26	E. 25 m.	Variable, calm
11	0 42	19 36	W. 22 m.	Got S.E. trade
12	0 05 S.	20 51	W. 5 m.	S.b.E. light
13	1 11	22 06	No observations	Ditto
14	3 38	23 37	S. 36 m.	S.S.E. smart
15	5 50	25 34	S. 67° 31 m.	Smart breeze
16	8 07	27 08	S. 17 m.	Ditto
17	10 15	28 11	S. 30 m.	Ditto
18	12 13	28 48	Current almost imperceptible	S.E., S.E.b.E.
19	14 47	29 05	S.S.W. 10 m.	S.S.E., E.S.E.

[The remarks of our 'Novice" are very judicious. Old fashions are wearing out fast. We shall not pretend to decide the question, and content ourselves with adding now that it is a good principle in making a passage to lay the ship's head for her port as nearly as circumstances allow But we shall be very glad if our readers would follow the good example of our correspondent, by sending to us their passages, with dates, &c., across the equator, the comparisons of which would soon settle the question.—ED. *N. M.*]

DIRECTIONS FOR PALOAN BAY.

The following brief sailing directions for Paloan Bay, by Captain Bate, have been kindly sent to us. The knowledge that water is to be obtained there, and good shelter during the N.E. monsoon, may prove of service to the navigation of those seas:—

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Paloan Bay (Island of Mindoro).

Mindoro Island is in latitude 13° 25′ N., longitude 120° 20′ E., and affords excellent shelter in the N.E. monsoon. It is also a convenient place for vessels to obtain supplies when passing through the Mindoro Strait.

The Bay lies S.S.E. of Point Calivité; it is four miles wide at the entrance, of a semi-circular form, running back three miles in a northerly direction.

There are no dangers in the Bay. Reefs, dry at low water, extend a quarter of a mile from either point, at the entrance having deep water close to them. The soundings at the entrance are from 45 to 50 fathoms, half a mile to the southward of which they increase to 200 fathoms.

The best anchorage is in the N.E. extremity of the Bay in 14 fathoms, (to which the water suddenly shoals from 20 fathoms,) a mile from the beach, and West from a small isolated head upon which a hut is erected. There is a black rock close to it standing a few yards in front of a sandy beach, which shows in good relief.

A small river disembogues immediately on the north side of the cliff, where good water can be obtained with facility. The coral projects half a mile from the entrance of the river, and has 10 and 12 fathoms close to its edge.

Care must be taken when beating into the Bay, for the squalls come violently off the high land, are very sudden, and at night do not give the least warning.

The bottom consists of a black tenacious mud, from which it is difficult to extricate the anchor after it has been down a few days.—*China Mail, June* 24.

PACIFIC ISLANDS AND DANGERS.

The pages of this work contain a very considerable accumulation of this kind of information relative to the Pacific. We add the following, leaving the discussion of its merits by comparison with other authorities for the present, but which will all be found embodied in the best of charts hereafter.

New Balista Island	18° 14′ N	113° 14 W
Barber's Island	8 4	170 0
Shoal	14 44	170 30
Shoal	16 30	163 54
Shoal	6 36	166 0
A Bank	26 0	173 24

(In the S.E. part plenty of fish, turtle, and seal.)

Island	19 46	115 0
Island	24 40	168 0
Hennis Island	27 46	175 0
Island	28 36	171 42
Island	17 35	136 0

(Marquesas Islands, N.E. by N. from O'Paro Island lies a shoal with from five to fifteen fathoms, discovered by S. D. Morris, barque *Fortune*. The native name of the Island is Rapped.)

Paltron's Island	10 23	165 23
Cooper's Island	25 48	131 35
Sapron's Island	26 2	173 35
Starbuck's Island	5 40	156 55
New Nantuckets	0 11	176 20

(With a reef ten miles.)

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Island	0 42	176 20	
Fanning Island	3 48	159 39	
Washington Island		159 39	
Reef	16 49	160 40	
Group of Islands	31 6 S	112 24	W
Island	20 0	169 30	
Independence Islands	10 25	179 0	
Reef	5 30	175 0	
Island	4 43	174 40	
Rock	51 51	164 42	
Thomas Dickason Reef	21 32	168 54	

(Two cables' length, discovered at 4h., A.M., blowing a S.E. gale, ship going nine knots. Narrowly escaped shipwreck.—*Sydney Herald.*)

Reef	1 13	159 45
Ohs Islands	23 58	131 5
Island	13 0	160 0
Bhœnix	3 35	171 39
Bernie Island	3 9	171 18
Boulcot Island	2 47	171 46
Charlotte Island	4 29	171 55

(Eighteen miles S.E. of the Island Amagura lies a small low island; and about west from it, at four miles' distance, lies a dangerous reef, two cables' length E.b.N. from Roberts Island.)

Reef near the Equator		150 0
Favourite Reef	23 35	179 11
Island	15 35	175 23
*Island discovered by a French ship	21 39	138 32
*Aurora Island	52 32	41 18
Mitchel's Group	7 9 S	179 47 E
Reef	26 6	160 0

(No woodland, moderately high.)

Reef	23 48	164 14
Sepper Island	6 7	177 40
Starbuck Group	Equator	178 30
Tracey's Island	7 30	178 46
Island	1 57	174 30
Drummond Island, Nautilus Shoals		174 50
Chases Island	2 26	176 0
Greenwich Island	1 5	154 30
A small Island	3 50	155 46
A small Island	3 15	154 41

(Sydness, thirty-five miles to the eastward of its position on the chart.)

Pickerton Reef	18 34	164 32
Cumberland Reef	26 20	160 0
Favourites Reef	23 46	164 12
*Foster Tyans Shoal	31 56	160 0
*Rapid's Reef	21 40	174 40

(On the chart in lat. 21 56, long. 175 26.)

*Underwood's Reef	15 42	175 18
*Ship Mucalo Reef	18 10	175 0

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*Marex Reef	8 25	165 32	
*Avan Island	23 32	162 52	
*Ploughboy Island	8 30	176 2	
(Surrounded by a reef eight or nine miles off shore.)			
*Sarah Scott	10 45	163 12	
Gaspar Islands	15 0 N	179 18 E	
Reef	11 0	179 24	
Island	31 0	144 24	
Islnad	29 36	143 0	
Island	30 0	143 0	
Island	31 0	155 0	
Island	19 6	163 33	
Island		165 33	
Darkers Island	22 24	163 5	
Reef	17 6	159 14	

(In lat. 20° 30′ N., long. 152° 30′ E., lies a small sandy bank, with heavy breakers, N.E.b.E. of Nicaheva.)

A group of Islands	25 6	145 44	
(Lies a shoal, with from five to fifteen fathoms.)			
Islands	19 31	168 35	
Massachusetts Island	22 28	177 5	
(A small rock S.S.W. about ten miles.)			
Cappers Island	20 6	131 54	
64 Fathom bank	36 25	179 30	
Grangers Island	18 58	146 14	
Reef	31 30	154 0	
Farnham Island	14 46	169 18	
*Kound Killy Harbour	6 52	158 24	

(The harbour of Ascension being very indefinitely laid down, and a great many exceptions, extends to the north-east of the Island forty miles long.)

* Reef 80 miles long	7 21	156 30	

(This reef the ship *Isabella* was lost upon, bound to Manila, observed on the reef.)

*Grimes Island, ship Jean	9 16	145 43	
(Six miles in circumference.)			
(Mumfords Shoal, eighteen miles S.b.W.½W. from Vetthonc Island.)			
*Lyrus Reef	8 43	111 40	
*Shoal	7 38	112 0	
*Bank (least water, 7 fathoms)	7 42	111 73	

THE MERCANTILE NAVY LIST.—We are glad to see a continuation of this little book, "by authority," as we should be to see any work calculated to raise the character of our valuable merchant seamen. It abounds with all that information which belongs to such a work relating to Shipping Masters, Certificates, Masters and Mates, Pilots, Steam Vessels, &c., official notices and shipping returns. We think, however, that the publishers do wrong in placing so high a price on it as double that of Mr. Murray's.

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INSTITUTION FOR THE ESTABLISHMENT OF SAILORS' HOMES, DESTITUTE SAILORS' ASYLUMS, AND ASYLUMS FOR AGED SEAMEN, *at the Principal Sea-ports in the United Kingdom and Colonies.*

We are happy to find that an Institution under the above title is, at last, formed, and has already commenced its operations at 35, Craven Street, Strand.

Among the list of its Patrons we meet with the names of many of our most leading men in the Naval and Mercantile world; men who have always rendered themselves conspicuous for their hearty and energetic advocacy of the Sailor's Interests, on every occasion that has offered. On such a one as this, therefore, we are not surprised to find them mustering so strongly as they do in a cause that has materially, essentially, and solely at heart, the good of our seamen.

The necessity of Sailors' Homes has been so often set forth in this Journal, in the narratives it has from time given of their progress, under the fostering hand of Capt. W. Hall, R.N., that we can scarcely add anything new on the subject, except that the experience resulting from the successful working of thirteen Homes (for every one of which we are indebted to the exertions of the gallant Captain) has reduced into a *practical* fact, whatever we may or could have *speculatively* said in their favour. Our object, therefore, in calling the attention of our readers to this subject now, is not again to point out to them the necessity of these Homes, but simply to urge upon them to give them, through this Institution, every support in their power.

If the claims the sailor has upon us for past services be not enough to incite us to the adoption of active measures for his social improvement, and the promotion of his comforts, let our dread of what the future may have in store for us, if our seamen are found wanting in the hour of danger, stir us up.

These remarks are put forth in no desire to create unnecessary alarm, as the following fact will attest.

A Committee on Manning the Navy, consisting of some of the most able and distinguished Officers of the Service, has been sitting at the Admiralty for several weeks past, and has, as yet, devised no measures for recruiting the Service. The conclusion this fact must lead to, and a fearful conclusion it is for a maritime country like our Island Home, is that *the Sailor is scarce.*

It is not our purport here, to trace this result to its host of causes; one cause is sufficient for us, being sufficiently simple to be within the comprehension of all, and that is our total indifference about the Sailor. The little or no protection we give him against seaport plunder; our gross desertion of him when rendered destitute by sickness or other causes; the little or no provision we make for him in his old age.

These observations apply with particular force to the seamen of the Mercantile Marine. Let, therefore, those who are most interested in the welfare of these men, those who are most indebted to their exertions, our merchants and our shipowners, come forward and assist in the establishment of a Home at each of their seaports. With such an Institution as the one before us to back up their exertions, to suggest to them the way to go about the good work, in a word to do the work for them, in a practical business like manner, there can be no longer any excuse for their apathy and indifference as to the comforts of their seamen.

As we are well aware of the truth of the old adage, that what is every body's business is nobody's business, and that though every one may recog-

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nise the necessity of these Homes, yet if some single person does not make the first movement in the cause, no progress or advancement can possibly be made, we earnestly recommend to every reader of this article, who may be a resident of a seaport, who may admit the importance of the cause here advocated, and who may be desirous of having such an establishment in his own seaport, to place himself in immediate communication with the Institution. And here we cannot do better, in order to show him the nature of the assistance that will be afforded him, than make the following extract from the Prospectus issued by the Institution:—

"It is proposed by this Institution to extend the benefit of these HOMES, as well as of ASYLUMS FOR DESTITUTE SEAMEN, to the principal Seaports in the United Kingdom and Colonies.

First,—By agitating the subject at each Port.

Secondly,—By promoting and encouraging the formation of Local Committees.

Thirdly,—By affording every information to such Committees for their guidance as to expense, regulations to be adopted, &c., &c.

Fourthly,—By heading such Subscription Lists as may be opened at each Port, with such donations as the funds of the Institution may admit of.

"And here it is confidently hoped that the National importance of the cause advocated—the urgent necessity there exists for ameliorating the condition of the Sailor on shore—the high and well-earned popular favour in which his character is held by all classes of the community,—and the general sympathy which everything that concerns his interests must therefore command, will, by placing sufficient capital at the disposal of the INSTITUTION, secure to the country the successful achievement of these great objects."

In conclusion, should there be any persons who are still sceptical as to the advantages of these Homes, for we know full well that every attempt at social improvement, as it necessarily implies an innovation upon old-established habits and customs, has a host of obstacles to contend with from ignorance or prejudice,—to such, we repeat, who are still sceptical, we strongly recommend the perusal of Mr. Montague Gore's able and eloquent pamphlet on Sailors' Homes, together with the practical, business-like sketch of their origin and progress in this country, by Captain Hall. These no doubt may be had on application at the office of the institution.

PRESERVATION OF THE CONTRACT STEAM PACKET DEE FROM LIGHTNING.—*Copy of a Letter from the Admiralty Agent to Captain Austin, R N., Superintendent of Packets.*

Southampton, 21st June, 1852.

SIR,—I deem it my duty to report to you, that when I was on board the *Dee* as Admiralty Agent, at the Havana, on the 17th of April last, a very heavy storm of thunder, lightning, hail and rain came on just as we entered the port and moored alongside of the Coal Quay. I was delayed for more than an hour in landing H.M. mails, and during the gale the lightning struck the spindle on the mizen royal-mast, and bent it slightly, descended harmlessly down the conductors of Sir Snow Harris's invention, and at the same instant of time shivered the spanker boom of the *Fernando Catolico*, Spanish packet steamer, anchored close athwart our stern.

Some of the passengers, who were sitting with me under the deck and before the mizen-mast at the moment of the shock, expressed great alarm at the instant; its violence was sensibly felt. The lightning was seen by those on

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the quarter-deck to quiver in a zig-zag form along the chain ridge ropes of the awning, but did no damage.

(Signed) I have the honour to be,
W. M. NEWENHAM, Lieut. R.N.

[We are informed that several persons on board the Spanish packet were dangerously hurt.—ED.]

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory.
From the 21st of September, to the 20th of October 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter.		Strength.		Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M	P.M	A.M.	P.M.
		In. Dec.	In Dec	o	o	o	o						
21	Tu.	29·63	29·93	49	55	47	57	NW	NW	3	5	qbc	qbc
22	W.	30·43	30·45	45	57	39	59	W	NW	1	3	bm	bcm
23	Th.	30·50	30·50	56	60	49	61	W	W	1	1	om	omf
24	F.	30 51	30·45	52	62	46	63	S	SE	1	1	bf	bc
25	S.	30 28	30·14	55	62	47	63	NE	E	1	3	bef	b
26	Su.	29·93	29·93	52	60	48	61	NW	NE	1	2	of	bc
27	M.	29·90	29·84	53	61	48	62	N	SE	1	1	of	bcm
28	Tu.	29·38	29·18	53	59	51	60	NE	S	3	4	or (1) (2)	bcptl 3) (4)
29	W.	29·22	29·26	56	56	50	60	SW	SW	5	4	qbc	bcp 3)
30	Th.	29·55	29·63	51	56	45	57	W	W	5	5	qbc	qbc
1	F.	29·56	29·58	47	53	40	54	SW	SW	2	4	bcp (1)	o
2	S.	29·38	29·46	47	54	46	56	W	W	2	3	bcmp 1)	bc
3	Su	29·74	29·82	48	55	41	56	NW	NW	4	3	b	bc
4	M.	29·75	29·48	47	52	40	53	SE	S	2	6	ogr (1) (2)	qor (3) (4)
5	Tu.	29·02	29·16	52	55	46	56	W	NW	5	6	qbc	qo
6	W.	29·54	29·62	46	46	41	47	NW	NW	2	4	or (2)	ophr 3)
7	Th.	29·80	29·90	46	50	38	51	NW	NW	5	5	qbc (2	qbcm
8	F.	29·88	29·86	43	44	40	46	NW	N	2	3	o	bc
9	S.	29·96	29·99	38	45	34	46	N	NW	1	2	bcm	bcm
10	Su.	29·96	29·98	46	52	36	54	NW	N	1	1	om	bc
11	M.	30·10	30·11	48	53	41	54	NW	N	1	2	o	bc
12	Tu.	30·41	30·38	45	52	38	54	N	NE	2	2	b	bc
13	W.	30·36	30·34	44	52	40	53	NE	NE	1	1	b	bc
14	Th.	30·30	30·28	50	52	44	53	NE	NE	1	1	o	o
15	F.	30 30	30·26	50	53	45	54	E	E	3	3	o	bc
16	S.	30·17	30·15	51	52	45	53	NE	E	2	2	o	bc
17	Su.	30·21	30·19	39	53	33	55	W	NE	1	2	bcm	b
18	M.	30·19	30·26	44	53	41	54	N	NE	1	3	bcm	bc
19	Tu.	30·48	30·48	42	52	36	54	SW	W	1	1	of	bcm
20	W.	30·37	30 29	42	55	34	56	SW	S	1	2	bf	b

September, 1852.—Mean height of the barometer = 29·914 inches; mean temperature = 56·9 degrees; depth of rain fallen, = 4·04 inches.

TO CORRESPONDENTS.

We have been obliged to reserve several communications this month which shall appear in our next, as well as some important notices of new works, &c., and among them a neat method of *deducing the Meridian Altitude*, from two altitudes observed near the meridian, just published by the Hydrographic office.

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THE

NAUTICAL MAGAZINE

AND

Naval Chronicle.

DECEMBER, 1852.

Harbours of New Zealand, 1851,—Character of Natives.—*Extract from a Letter of an Officer.*

When at the Bay of Islands in December, 1851, Waka, the most influential chief in New Zealand, was at Hokianga endeavouring to quiet a dispute which had risen between two parties of natives, and was likely to end in disturbance, which I have since heard took place; they made use of their arms, and lives were lost, amongst whom was the chief Rippa, who had distinguished himself in the year 1845, when supporting the government against the rebel chiefs. The troops quartered at the Whapoo above Kararika in the Bay of Islands, are a detachment of the 58th regt., consisting of 143 men. The town of Kararika appears to be much reduced in importance since the disturbance which took place in 1845, when the flagstaff was cut down by the chief John Heke, and still remains prostrate upon the hill; the number of its present inhabitants is about 400 souls. Mr. Clendon is here the chief police magistrate. There is no clergyman of the Church of England here; the Missionary settlement at Palica is broken up, and a considerable portion of the natives desire that no English settlement shall be made upon that side of the harbour, whilst Waka with others are anxious for settlements to be made in various places both there and in the Keri Keri. Those natives who were slaves taken by the chiefs in the native wars with the tribes in the southern parts of New Zealand, are now returning to their homes in great numbers, in consequence of the chiefs and tribes who held them in captivity having, *through the*

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influence and spread of Christianity, in a great degree relaxed their claims upon them.

The town of Auckland I found greatly increased, and exceedingly improved in all respects, since last I saw it in January 1846. The face of the country has also changed its character; the original fern woods and scrub which covered the surface of the ground having given way to extensive cultivations of potatoes, wheat, and other grain in regular enclosures. The quantity of land at present under cultivation round Auckland, within a radius of ten miles, is 7,000 acres, and will shortly be increased to 10,000.

The extraordinary improvement in the condition of the natives is, I believe, greater than that which has been produced upon the country; none are to be seen in the native mat, and very few in the blanket; all wear European clothing, and many are well dressed: they have taken to labour, and have learnt various trades, and are good workmen, and make good seamen. There are in the coasting trade in the northern part of the colony in New Zealand, 45 vessels exclusively the property of natives; of these 30 are schooners and 15 cutters; they amount to 594 tons, the largest being 25 and the smallest 9 tons burthen; these vessels are owned by thirty individuals, who are sole proprietors, and four who are part owners in company with others: two individuals possess three vessels, four two, the rest one each, except one native, who, besides a part ownership in three vessels, is the sole owner of a fourth: five other schooners and a cutter are now building, and between the 1st of April and the 31st December, 1851, the sum of £985 has been advanced on loan to natives in the northern province, to enable them to purchase vessels. The trade in which they are engaged consists of flour, wheat, flax, potatoes, kauri gum, fire wood, spars, timber, cattle, horses, pigs, poultry, &c., which they carry from their various settlements to the principal European ports in their vicinity.

Between the 1st of April and the 31st of December, 1851, the amount of money advanced on loan to eight natives, has been £985; of which the largest sum is £300, and the smallest £10: the largest sum was repaid in four months in three instalments of £285, £5, and £10; the total amount repaid is £353, leaving £632 still due. In these transactions it has been found that the natives are deserving of the greatest confidence. In the Savings' Bank at Wellington, the sum of £735 11s. 1d., is deposited by twenty-six individual aborigines.

Such confidence as is placed in the Government of New Zealand by the natives, and the advantages which they derive from their communication with Europeans, of which they are fully sensible, will doubtless be the strongest security against any further disturbance of the peace which now exists between the races.

With respect to the number of vessels which have arrived at Auckland during the year 1851, six have arrived from London, forty from Sydney, two from Wellington, and four from Port Victoria. Of coasters 472 have been entered inwards at the Custom House at Auckland, and 483 have been entered outwards, during the year 1851.

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At Nelson no great improvement is perceptible in the town, but the increased cultivation of the neighbouring districts, and the advantages derived from it, are not exceeded in any part of New Zealand.

The Waitoe, which Major Richmond was desirous that I should see, is a bay near the bottom of Queen Charlotte Sound. It is most conveniently situated for a settlement, having a large extent of level land in its vicinity, and abundance of fresh water, which flows from two rivers. It is surrounded by high land, and well sheltered, as is every bay contained in this magnificent harbour. The land is most productive; its vicinity to the Wairou plains is the principal reason for this particular spot being selected for the formation of a settlement. When the increase of emigration sends greater numbers to settle in this country, other places will be found with greater advantages attending them; such, I think, is the bay forming the head of the sound, from which to the Pelorus River a man can walk in half an hour. There is a great extent of level land between, heavily timbered, which shows the richness of the soil. Here may be an important line of communication between Nelson, Cloudy Bay, the Waitoe, and the plains adjacent, and the Tary Channel offers the shortest communication with Wellington. Coal is found in Massacre Bay, near Nelson; and the use of steam will bring the settlements already formed into close communication, as well as others, for which there is ample space, when the time comes to make use of it. In Queen Charlotte Sound there are many convenient anchorages; the water is for the most part deep; and like all parts of Cook Straits and New Zealand in general, strong breezes, with sudden and violent squalls, are to be expected.

Port Victoria, upon the north side of Banks Peninsula, is not a good harbour, being open to the north-east; the wind, however, seldom blows home: the principal danger there is to be expected from the violent gales which blow from the S.W. over the low land and directly into the anchorage off the town, which small vessels seldom escape: the wrecks of two vessels driven on shore by these gales were upon the beach at the time of our visit to the place. The only communication between this port and the Canterbury plains and Christchurch, is by a river, which has a dangerous bar at its mouth, not passable at any time with the wind at north-east, and practicable only for small vessels; the entrance to the river is outside the heads of Port Victoria. There is a road over the mountain ridge behind the settlement, which can be used only by persons on foot or horseback. A road has been begun along the face of the hill which overlooks the port, but it has not been completed for want of funds. The difficulty of communication between the port and the plains, and the transportation of produce, with the insecurity of the harbour, and transhipment of cargoes being necessary, are the great objections to this settlement; to which may now be added, the great difficulty of obtaining stock, in consequence of the people engaged in that trade having left their vessels and gone in search of gold. Coal has lately been discovered of good quality at the foot of the mountain bordering upon the plain, which is an event of great importance. It is generally believed by

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settlers at that place, that wool will be the only produce at this settlement, and that agriculture cannot be carried on to any advantage.

Port Levy, from its want of shelter, cannot be a place of great importance; but when Akaroa becomes a place of greater resort, the head of Pigeon Bay may be the site of a useful settlement, the land fit for such purpose being abundant and well watered, the port being sheltered to some extent, the north wind to which it is open never blowing home, the distance to the head of the harbour of Akaroa being eight miles, and to the present settlement there six miles further overland, upon which there will be no difficulty in making roads; the space between them is at present densely covered with valuable timber.

At Akaroa very little improvement or alteration of any sort appears to have been made. Lieut.-Col. Campbell, the Chief Commissioner for Crown Lands, informed me that coal had been reported to him as existing on the west side of the harbour, a seam of it having been discovered in a stream near a native settlement by a European. I caused a search to be made in this stream for a considerable distance above the pah, but without success. The Chief Commissioner also informed me that he had found a route upon which a road might be made from French Bay, which is near the head of the harbour of Akaroa, to the Canterbury plains, the total distance of which would be 27 miles; 18 could be over level ground, and the estimated rise in the remainder will be one foot in fourteen. The expense of this road is estimated by Col. Campbell at £30,000: for a like sum the road from Port Victoria to Christchurch can be made available. If such a road is practicable, the harbour of Akaroa will probably rise to the importance it deserves.

The greater part of the Canterbury block lies to the southward of Banks Peninsula, the population of which settlement is so small in comparison with the extent of land for occupation, that for a considerable space of time it can only be applied to sheep farming.

In consequence of the rivers which traverse these plains, (flowing from the snowy mountains bounding this track of land upon the west,) a line of road is impracticable. The produce must necessarily be conveyed by water from the mouths of the rivers to the nearest harbour for final shipment, which harbour is Akaroa, the only good one on this coast, being locked perfectly secure, and from its prominent position on the coast affording every facility of ingress and egress. At present the number of Europeans settled in Akaroa and its vicinity are 297 males and 162 females; of natives, 79 males and 45 females. The land fenced in and cultivated belonging to the former is 200 acres, and to the latter 118 acres.

Lieut.-Col Campbell informed me also that there were thoughts of forming a settlement at Timaru, a place upon the coast south of the Canterbury settlement, and between Akaroa and Otago, in lat. 44° 30′ S., and long. 171° 20′ E., for the purpose of shipping the produce of the plains in that district. I was unable to visit the proposed anchorage, but from the nature of the coast in general, I should think it

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highly objectionable. The water is shoal to a considerable distance from the land, which is so low and level that it is not seen until close upon it, the eye being deceived by the high land in the back ground, which rises behind the plains. The weather is also so unsettled, that it is absolutely necessary to keep a sufficient offing, the place being at the bottom of a deep bight, it may be found difficult to get out of it with the wind strong on shore: whale ships have resorted to this roadstead upon urgent cases of necessity; but they carefully avoid the coast under any other circumstances. While we were on that coast, it was calm at noon, and the weather fine, without the slightest indication of a change, except that shown by the barometer, which had fallen; by 8 P.M. the ship was reduced to close reefed fore and main topsails, the mizen being handed; the wind was off shore. It is remarkable that the available land in New Zealand is generally without a harbour; and where shelter is afforded, the land in the neighbourhood of it is mountainous and unavailable.

At Port Ross, in the Auckland Group of Islands, the soil (if such the peat may be called which covers the rock) produces little more than stunted trees and shrubs, amongst the roots of which there is grass, upon which sheep and oxen thrive. The climate is unfavourable to cultivation of grain or food, and the establishment at present upon the Island is to be removed. It is a place fit for no useful purpose of settlement, the climate being so wet and boisterous that not more than two days out of the seven composing the week can be applied to labour out of doors.

PITCAIRN ISLAND.

The Pitcairn Islanders must ever continue a source of concern and interest to this country, and particularly so at the present time when they appear to be growing too numerous for the land of their fathers. In our number of February last will be found an interesting report of them by Mr. Dillon, R.N., and in that month when they were visited by Captain Wellesley, in H.M.S. *Dædalus*, he said:—

"I found, as heretofore, the utmost harmony and good feeling existing among these interesting people; there were no complaints made or difficulties requiring adjustment, but the whole community seem actuated by the desire to merit a continuance of the sympathy and regard which has been shown to them. Their attachment to Her Majesty the Queen is unbounded. At the close of the year 1851, the population consisted of 166, viz.: 85 males and 81 females, in 22 married families; 46 children between the ages of 6 and 14 attend school. In 1851, the marriages were 3; births, 12; deaths 2.

The resources of the Island appear to be at present sufficient for them, as enough produce is annually raised to enable them, after supplying their own wants, to obtain clothing and other necessaries from

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ships calling there for refreshments; but the population increases so rapidly that in the course of a few years some steps must be taken to provide for their increased requirements, as all the land available for cultivation is even now devoted for that purpose..

The following further report results from the visit of Rea-Admiral Moresby, the Commander-in-Chief on the South American Station, who, with his whole officers and crew, appears to have been highly gratified at the state of primitive innocence, and consequent happiness, in which he found the islanders.

The following is the Admiral's report:—

Portland, at sea, lat. 25° 25′ S., long. 126° 29′ W., August 12th, 1852.

Sir,—Continuing the report of my proceedings from the 27th ult., as detailed in my letter No. 71, I request you will inform the Lords Commissioners of the Admiralty that after passing over the position assigned to Incarnation Island without seeing it we made Pitcairn Island on the morning of the 7th inst.

Early on Sunday, the 8th, I landed. From this time to the period of our departure, on the 11th, I remained on shore, and a constant intercourse was kept up with the *Portland*.

It is impossible to do justice to the spirit of order and decency that animates the whole community, whose number amounts to 170, strictly brought up in the protestant faith, according to the established church of England, by Mr. Nobbs, their pastor and surgeon, who has for twenty-four years zealously and successfully, by precept and example, raised them to a state of the highest moral conduct and feeling.

Of fruits and edible roots they have at present abundance, which they exchange with the whalers for clothing, oil, medicine, and other necessaries; but the crops on the tillage ground begin to deteriorate, landslips occur with each succeeding storm; and the declivities of the hills, when denuded, are laid bare by the periodical rains. Their diet consists of yams, sweet potatoes, and breadfruit. A small quantity of fish is occasionally caught. Their pigs supply annually upon an average about 50lb. of meat to each individual; and they have a few goats and fowls. Their want of clothing and other absolute necessaries is very pressing, and I am satisfied that the time has arrived when preparation, at least, must be made for the future, seven or eight years being the utmost that can be looked forward to for a continuance of their present means of support. The summary of the year 1851 gives—births, 12; deaths, 2; marriages, 3. On their return from Tahiti they numbered about 60, of whom there were married 13 couple: the rest from the age of 16 to infancy.

Mr. Nobbs was anxious to avail himself of my offer to convey him to Valparaiso, and thence enable him to proceed to England, for the purpose of obtaining ordination. At a general meeting of the inhabitants their consent was given, provided I would leave the chaplain of the *Portland* until Mr. Nobbs returned; the advantage is so obvious that I feel confident their lordships will approve my consenting. From the anxiety which has been expressed by high authorities of

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the church for Mr. Nobb's ordination, I anticipate that it will be effected with so little delay that he will be enabled to return to Valparaiso by the middle of January. I enclose a copy of the memorandum given to the Rev. Mr. Holman.

I was unable to comply strictly with the list of articles which their lordships authorised me to give the islanders. I enclose a list of what was supplied; they were greatly wanted and gratefully received. The crew of the *Portland* also requested permission to give a portion of their allowance, and also that they might be allowed to send them a whale boat, with other stores from Valparaiso.

Captain Chads and the officers were most generous. I was fortunate in procuring at Borobora a young bull and heifer, also a ram, accidents having befallen the ones previously sent. The packet of seeds forwarded in their lordships' letter, No. 132, of the 4th of December, 1851, was duly delivered.

Should any unfortunate circumstance prevent the periodical visits of the whale ships, they would be left entirely to the charitable consideration of her Majesty's government. The crews of the whale ships have invariably conducted themselves with marked propriety. They take their turn of leave on shore, and their sick are received and nursed with the greatest care.

The *Adeline Gibbs*, American whaler, Mr. Weeks, master, was there during our visit. Mr. and Mrs. Weeks were living ashore. It would be a happy circumstance if a person like her could be found to reside among them.

I forward a continuation of their journal since that published by Mr. Brodie; a very correct statemenl, which renders unnecessary any further remarks.

I have, &c.,
FAIRFAX MORESBY.
Rear-Admiral and Commander-in-Chief.

Continuation of the Register of Pitcairn's Island from that published in the work of Mr. W. Brodie.

1850.—1st January.—Arthur Quintal, Jun. elected Magistrate; Thursday, O. Christian and Edward Quintal, Councillors.

6th January.—Robert Young born.

23rd January.—This day was observed as the anniversary of the settlement of the colony sixty years since: one survivor of that strange event and its sanguinary results witnessed the celebration.

At daylight one of the *Bounty's* guns was discharged, and wakened the sleeping echoes and the more drowsy of the inhabitants; at 10 o'clock Divine Service was performed. After the sermon the various letters received from the British Government and private friends were read from the pulpit and commented upon. At 12 a number of musketeers assembled under the flagstaff and fired a volley in honour of

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the day. After dinner the community, males and females, assembled in front of the church, where the British flag was flying, and gave three cheers for Queen Victoria, three for the Government at home, three for the Magistrates here, three for absent friends, three for the ladies, and three for the community in general; amid the firing of muskets and the ringing of the bell. At sunset the gun of the *Bounty* was fired, and the day closed in harmony and peace. Much, very much, have we to be grateful for, both to God and man. It is voted that an annual celebration be observed.

24th March.—Daniel M'Coy and Lydia Young married.

20th April.—Charles Carleton Vieder Young born.

2nd. June.—John Pitcairns Elford, native of Adelaide, New South Wales, baptised.

15th June.—Julia Christian died of dysentery.

15th July.—Susannah, a native of Tahiti, and last survivor of the *Bounty*, died from the prevailing epidemic and the exhaustion of old age combined.

18th September.—Robert Charles Grant Young born.

27th September.—Mrs. Eliza C. Palmer, wife of George Palmer of Nantucket, died of consumption.

23rd September.—Edward Quintal (2nd) fell from the precipice upon the rocks below and badly fractured his leg.

24th December.—Charles William Grant born, son of the master of a whaler.

Summary of the year 1850.—Number of Births 4; Deaths 3; Marriage 1. Number of Inhabitants 156: Males 79, Females 76. Number of Ships touching here 47: American 29, English 17, Hanoverian 1.

1851.—1st January.—Thursday O. Christian elected Chief Magistrate; John Buffett, Jun., and Thomas Buffett, Councillors.

8th January.—Mary Anne M'Coy born.

21st January.—Frances Adelaide Quintal born.

23rd January.—Observed the anniversary of the settlement of the colony.

—— David Buffett and Martha Young married.

15th March.—By the accidental discharge of a fowling-piece, in a whale boat that was out fishing, three persons, viz., Abraham Quintal, John Buffett, and Fletcher Nobbs, were seriously injured.

30th March.—Anna Rose Christian died, aged three years.

27th April.—Mary Isabel Adams born.

13th July.—Fairfax Moresby Quintal born.

5th August.—Joseph A. M. Buffett born.

10th August.—Jacob Christian and Nancy Quintal married.

16th August.—Twelve of the inhabitants sailed in the *Joseph Meigs* for the purpose of visiting Elizabeth Island. On their arrival at the island they discovered a human skeleton; and as nothing could be found that may lead to discover who this unfortunate individual was, it must ever remain a mystery.

5th September.—Thomas A. Buffett born.

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15th September.—Julia E. Quintal born.

28th October.—William Ward Dillon Adams born.

5th November.—Sarah Clara Quintal born.

9th November.—Julia Anna Christian born.

11th November.—Thirty-eight of the inhabitants sailed in the ship *Sharon* of Fairhaven, for the purpose of visiting Elizabeth Island. On Friday the 14th, after a boisterous passage of three days, they landed upon Elizabeth Island, when they immediately set about wooding the ship and exploring the country, which is evidently of coral formation; the soil is very scanty and totally unfit for cultivation. Various specimens of marine shells are scattered all over the surface of the island, which, in combination with the thickly scattered pieces of coral, renders travelling both difficult and dangerous. Water is found in the north-west part of the island slowly dripping from the roof of a cave, which cannot be reached without the aid of ropes. The island rises about 60 feet above the level of the sea. Eight human skeletons were also found upon the island lying in caves. They were doubtless the remains of some unfortunate shipwrecked seamen, as several pieces of a wreck were found upon the shore.

27th November.—Sarah Adams died from a disease of the spine, aged 55 years.

13th December.—Benjamin S. Young born.

25th December.—Philip M'Coy and Sarah Quintal, Benjamin Buffett and Eliza Quintal married.

Summary of the year 1851.—Number of Births 12; Deaths 2; Marriages 3. Number of the inhabitants 166; 81 females and 85 males. Number of Ships touching here this year 24; American 18, English 6. A small amount of sickness among the inhabitants this year.

1852.—2nd January.—Abraham B. Quintal elected Chief Magistrate. Frederic Young and David Buffett, Councillors.

7th January.—At about 1h. P.M., intelligence was brought to the village that Robert, a native of one of the Society Islands, and who was left here sick from the American whale ship *Balaena*, was washed from off the rocks by the surf; those who were at hand when the news was told, immediately hastened to the place to learn the truth of the statement; upon arriving there, and not seeing anything of him, search was made along the rocks; this also proving unsuccessful, some of the men went in their canoes to search for him outside of the rocks. A few minutes after the canoes were launched, his hat was found some thirty or forty yards from the rocks: being convinced from this that the man was drowned, the search was continued with renewed vigour; and about an hour after his body was seen lying at the bottom, in about seven fathoms of water, and about twenty yards from where he was washed off. The men succeeded in recovering the body, which was interred the same evening. It was but justice to the memory of this poor man to add, that his good and quiet behaviour while among us, had gained for him the esteem and goodwill of all upon the island, and that his untimely end is deeply regretted by the whole community.

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29th January.—At break of day a ship was reported close in with the shore; all who had turned out of their beds hastened to the edge of the precipice to ascertain the truth of the statement; scarcely had they done so, when, from the heraldic bearing of her colours, she was by the teacher pronounced to be a man-of-war: the whale boat was immediately manned, and in the course of a few hours she returned on shore, bringing with them Captain Wellesley and others of the officers of H.M.S. *Dœdalus*, from the Sandwich Islands, viâ Tahiti, bound to Valparaiso. Captain Wellesley and his officers remained on shore all night, and returned on board the following morning, when a fresh party landed from the ship. Captain Wellesley and his officers were pleased to express their approbation of what they saw upon the island; and have, by the urbanity of their conduct during the few hours they were with us, gained the goodwill and esteem of all the inhabitants.

31st January.—At half past seven this morning, Captain Wellesley and his officers returned on board, and the *Dœdalus* left here for Valparaiso, bearing the good wishes of the island.

30th January.—Emily W. Christian born.

7th March.—David R. B. Young born.

14th March.—David R. B. Young died, aged seven days.

5th April.—Fletcher Christian died, after a lingering illness of many months duration, aged 40 years. As a member of the community, the conduct of Fletcher Christian was ever worthy of imitation; suffice it to say, that his many amiable and agreeable qualities will cause his memory long to be cherished by those he has left behind.

13th June.—John F. Young born.

VOYAGE OF H.M.S. "CALYPSO," CAPTAIN WORTH, TO THE PACIFIC.

Continued from p. 544.

On the 2nd June, at 11h. 30m. A.M., I sailed from Apia for the Fejee Islands, with the usual trade wind, shaping a course to round the next island of Savaii to the westward, and then to the south-westward; the weather from the 2nd to the 5th was squally, and the wind strong, accompanied with heavy rain and a high sea, causing the ship to pitch and roll heavily, the wind being from E.S.E., the therm. ranging from 77° to 82°, and bar. from 30·10 to 30·30. In sailing into the Fejee group I had determined, in consequence of the imperfect knowledge that existed respecting them, and the innumerable dangers with which they are surrounded, to enter the group from the southward, by rounding Turtle Island, and to do so I steered a course to take

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the ship about 40 miles west of it; having reached this point at 9h. P.M. on the 5th, sail was shortened until daylight, when it was again made, and the island steered for; and at 8h. 30m. A.M. the island was sighted a-head, and about 30 miles distant, when the course was altered to S.W.b.W., in order to pass it at the distance of 15 miles. To my surprise, however, at 10h. 30m. A.M. breakers were reported a-head, when the ship was immediately brought to the wind; and, it blowing fresh, sail was shortened, and the topsails double reefed, &c.; the reef was eventually weathered by about four miles. I had procured from the master of a whale ship at Apia Captain Wilkes' (of the United States Ex. Ex.) work, with his charts and plans of the Fejee Islands, in which it is stated that Turtle Island had been surveyed, and the reef (on which an American whale ship had been lost) examined. I cannot, however, conceive this to be the case; or, if so, some great error must exist in the publication; for not only is there no mention made of this detached and dangerous reef, but the position of the island itself is placed very erroneously; and which is the more necessary to correct, from its being the S.E. point of this intricate group, and which vessels from the eastward would usually round in entering it. We made the centre of this island to be in lat. 19° 47′ S., and long. 178° 8′ W., (29 miles to the eastward of Wilkes, who places it in lat. 19° 50′ S., and long. 178° 37′ W.,) with a reef extending five or six miles in a S.W. direction; and a large oval coral patch detached from it, lying north and south eight or nine miles in length, both of which were breaking heavily. The island is apparently about six miles in length.

Having stood sufficiently to the southward to clear the last-mentioned reef, we bore up W.b.N. in order to pass between the islands of Matuke and Totoia, distant about 130 miles, as being the clearest route towards the island of Ovolou, whither I intended in the first instance to go. The weather, however, appeared threatening, with a strong wind, and high sea; when, having reduced the sail, and made the ship snug with the precaution of having extra look out men on the yards and bowsprit, and running in towards these islands till 10h. P.M., at which hour the moon had set, I hove the ship to, not considering it prudent to run further in amongst the group till daylight, when at 5h. 30m. A.M. I again made sail, and at 6h. 30m. sighted both these islands N.N.W. At 10h. 30m. we passed midway between them; they are moderately high, or about 800 feet.

Proceeding almost in a direct line for the island of Ovolou, with the wind at east and N.E., we passed several islands, and sighted many more, all of which appeared to be surrounded by extensive reefs, the sea gradually smoothing as we got within the islands, though the wind was still strong, and the appearance lowering. On advancing further to the northward, we continued to sight several islands in various directions; and at 5h. 15m. P.M. the detached and dangerous reef of Mumbolithe was seen W.b.S., when sail was shortened, and the ship brought to the wind S.S.E., the reef bearing west three or four miles, the wind a strong breeze from east, the island of Auzan at the same

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time bearing N.W. Mumbolithe reef is about a mile in circumference, and is about fourteen miles south of Anzou; the sea invariably breaks heavily upon it.

At daylight (on the 8th) sail was made, and the ship steered N.N.W. for Ovolou, the wind being fresh from E.N.E.; the islands of Anzan and Ambitiki were passed, and at 9 o'clock Ovolou was sighted; and at noon we ran along its reef towards the anchorage of Levuka, where likewise was situated its principal town; but which has since been burnt down and entirely destroyed during the native wars, which are still continuing. Having reached the centre or widest passage (as shown by Wilkes' survey of the harbour of Sevuka, and which is very correct) of the three entrances through the reef into the anchorage, and having as a precautionary measure first sent the master and second master in the two cutters to sound and examine it, the ship was run in, and anchored at 4h. 40m. P.M., off the position where the town had stood (in 17 fathoms, fine sand and light mud), and at about a quarter of a mile from it.

The harbour of Sevuka is decidedly the most convenient anchorage in the Fejee group, being more central than any other; with its entrance so clear and attainable no accident can happen, either sailing into or out of it, with common caution; added to which, it is the only harbour where water can be easily obtained, a fine stream of which runs into it from the mountains abreast of the anchorage, and from which it can be rafted off with great facility and expedition. The anchorage is entirely sheltered by a reef, which runs nearly parallel with the shore, and distant from it about half a mile, and which keeps the water always smooth. Having completed water and procured wood from the wrecks of two American ships that lay on the beach, (one of which had some years since been burnt there, and the other, a brig, had been driven from her anchors about three months before our arrival, during one of the hurricanes which, I afterwards learned, had visited the Fejee group as well as those of the Friendly and Navigators, in the early parts of January and April with most destructive effect,) and having procured from the island of Viwa (situate in the bay of Ambau, and distant from Sevuka about twenty miles, and is the principal residence of the Missionaries and the foreigners) an English and a native pilot, I left Sevuka for that island at 7h. A.M. on the 11th, sailing out through the same entrance we had come in, and proceeded through the Montoriki passage with a fresh breeze but perfectly smooth water, the extensive bay of Ambau being entirely enclosed by a distant sea reef, and containing innumerable reefs and patches. The ship was conned from the mast-head by the two pilots and master, who, carefully watching the position of the different reefs and patches through which the channel to Vieva lays, varied the course accordingly, the lead being no sort of guide, the shoals being steep too, and much too thickly placed to steer safely amongst them by any other method. Soundings from 18 to 25 fathoms, after passing Monitoriki Island, was carried nearly the whole way to Vieva. We reached the anchorage off Vieva at 1h. 20m. P.M., and anchored in

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5 fathoms, the Missionary house bearing N.W.b.W., about two miles distant, and about a quarter of a mile distant from the extensive flat reef that surrounds that island.

At Vieva, which is very small, and contains about 400 or 500 inhabitants, we procured the usual supply of pork, poultry, fruit, and vegetables; and were visited by an immense number of the natives, who came off in double canoes of various sizes, some of them equal to contain a hundred persons. Wilkes has so faithfully described the appearance, manners, and customs of these people, and having myself already furnished Admiral Hornby with my observations on these points, as well as other details respecting the Fejee group, that it is needless for me to repeat them here, and shall briefly remark that the group contains upwards of 200 islands, the two large ones of Viti Levu and Vanna Levu being nearly 300 miles each in circumference, and containing collectively a population of 300,000 inhabitants, as stated to me by the Missionaries. All the islands being picturesque and beautiful, generally of moderate height, and richly wooded. The natives are for the most part a fine race, and are shrewd and enterprising; but also the most cruel, treacherous, and ruthless cannibals that can be conceived. But little trade is carried on amongst these islands; a few whalers, principally American, used occasionally to fish and seek refreshment amongst them, bartering musquets, axes, cloth, powder and shot, &c., for their supplies; but from the character of the natives, and the great difficulty and danger attending the navigation, it appears to be quite abandoned. From the limited time and means I possessed, it was not in my power to examine any of the innumerable reefs and shoals abounding in this neighbourhood; indeed to do so for any useful purpose would occupy many months. Wilkes, in his examination of the bay of Ambau, has placed within it various reefs and shoals; but the positions of many of them are erroneous, and there are very many existing which he has not shown at all. I am of opinion that his plan of this bay is not intended as a correct survey of it, indeed I do not conceive it possible that so extensive a sheet of water, studded as it is with shoals, could be effectually surveyed in the time and with the means he was enabled to devote to it. His positions of the islands and sea reefs appeared to me to be very faithfully placed.

On the 19th June, at 1h. 30m. P.M., I weighed from the anchorage off Vieva, and proceeded to that off a town called Agunduvow, (having on board an English and a native pilot,) which town is distant about 12 miles to the northward of Vieva, and situated on the coast of the large island of Viti Levu; my object in visiting that place being to demand the murderers of two Europeans, who had been surprised, whilst trading in a boat along the shore, by the natives of that town, robbed and massacred; and in the event of a refusal to burn their town. The route to this place was found most intricate, and studded with reefs and shoals, through which we had much difficulty in finding our way; and being conned as before from the mast-head, and having a canoe with native pilots on board, and one of our own boats with the

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second master keeping a couple of cables' length ahead of the ship, sounding, &c., we reached the anchorage on the third day, being obliged frequently to anchor, and having once grounded, but the bottom being soft mud no harm was done, and the ship easily hauled off. The position taken up was about 1,700 yards from the shore, between which and the ship was a flat coral reef, partially dry at low water, and extending to within two cables' lengths of where she was anchored in 3½ fathoms water.

Having failed to induce the natives of Agunduvow to give up the murderers, it was bombarded, and finally destroyed by fire; and on the morning of the 23rd I weighed, with the intention of proceeding to Levuka, (Poolou,) but the same difficulty was experienced in threading our way through the shoals that lay in this direction; and notwithstanding the precaution was taken of examining and buoying off as many as we could discover, and still conning her from the mast-head, the ship run upon a coral patch. The wind, however, being light, and the water perfectly smooth, she was easily backed off, assisted by the removal of the foremost guns, and some shot aft, and without receiving any damage. On approaching the Montoriki passage, through which we beat out of the bay of Ambau, the boats being still kept ahead looking out and sounding; and after making twelve boards we passed through, and arrived at Levuka at 5 20 P.M. on the 26th; and having procured wood and water, sailed at 7 A.M. on the 28th for Sua Lib, (or Solavou,) situated on the southern side of the large island of Vanna Sevu, and sailed through the reef by the Makougai passage.

I shall here remark that it is necessary, indeed indispensable, that to sail amongst the reefs and shoals of these islands, with any degree of safety, the day should be clear, and the sun bright and behind the ship, and the time of low water chosen, if possible, when they can always be distinctly seen, and with care avoided; and when the sun is ahead of the ship, or the day becomes dull, she should be at once anchored, as the shoals can no longer be distinguished. This remark of course alludes to vessels navigating inside the different sea reefs, for without there is no anchorage.

Having passed through the sea reef by the above-named passage, we again entered it through the passage of Bua, which is nearly opposite Sua Lib; but it becoming dark, I anchored for the night under shelter of the sea reef, and on the following morning anchored off Sua Lib, at 8 30 A.M., in 17 fathoms water; Sua Lib point bearing N.W.¼W. half a mile. This anchorage is by no means a good or safe one, for although in some measure sheltered by the sea reef, it is too distant (six miles) to afford it effectually; and when blowing strong, either along shore or upon it, a high sea gets up. Trading vessels usually prefer anchoring off Ragi Ragi, or Cocoa-nut point, which is about six miles further to the westward. Within the sea reef the current is often very strong, and is principally governed by the strength of the wind and the force of the sea breaking over it. Its rise and fall is five feet, which is about the average amongst all these islands.

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On the 1st July I weighed at 10 A.M., with a view of proceeding to Sandalwood Bay, situated on the S.W. end of the same island, (Vanna Scou,) and 20 miles to the N.W. of Sua Lib, the wind being light and variable from the southward and eastward, and the sun getting too far to the westward to see the shoals, I anchored at 2 50 P.M. off Cocoa-nut point, and weighed the next day at 11 A.M., and reached Sandalwood Bay at 3 P.M., anchoring in 6¼ fathoms water, Lecumber point W.⅛S., and Dimba Limba S.½W., off shore from the bottom of the bay about a mile and a half. As a good anchorage Sandalwood Bay is very superior to any in the Fejees, indeed it can hardly be surpassed anywhere; it is spacious, and a good portion of it entirely clear from shoals, with a mud bottom, and draught of water varying from 6 to 8¼ fathoms, and is perfectly sheltered on three sides by the land, and on the fourth or sea side by the reefs. Water can only be procured by sending some distance, and is not of good quality. Stock is to be obtained as at the other anchorages, but not so abundantly, there being but few inhabitants on this part of the island. The passage from Sua Lib to Sandalwood Bay, from the numerous reefs and patches, is confined and intricate till off Cocoa-nut point, when it becomes clearer. The shoals and reefs may be distinctly seen, provided the before-mentioned caution is used, of having a clear and bright sun behind you, and steering from the mast-head. We found the tide setting from 1½ to 2 knots, the flood setting to the westward, and the ebb to the eastward.

On the 4th, at 1 P.M., I weighed from Sandalwood Bay, on my return to Sua Lib, and after a tedious passage, having frequently to anchor in consequence of light and variable winds at times, whilst at others strong winds from the eastward, and a lee current, which obliged us to beat nearly the whole way: I reached it on the 6th at 3h. P.M. The pilot (an Englishman, whom I had engaged on first coming to the Fejees,) appeared well acquainted with this part of the group, as indeed he proved to be with all we had hitherto visited. On the next morning, at 6h. 30m., I again weighed, with a light N.E. wind, and sailed out through the sea reef we had passed in. As night approached it became squally and variable, with heavy rain; and towards midnight strong gusts of wind succeeded by calms were experienced; the ship was frequently tacked working to the eastward, being almost enclosed by the islands of Mokungai, Wakai, and Ambatiki, with their extensive reefs, and having also the dangerous Horse-shoe reef but a few miles to the southward, with the island of Goro and its reefs and shoals, about the same distance to the northward, these difficulties being increased by the uncertain set of the currents, which are often strong. This part of the group is dangerous in dark nights and uncertain weather, no anchorage or shelter being within reach, nor can any of the passages between the long belt of reefs which extend from the south side of the island of Vanna Levu, to the south side of Viti Levu, an extent of 60 or 80 miles, and which forms a lee shore, be attempted at night. On the following morning it proved fine, when we worked out clear of the reefs, passing to the eastward of Nairai

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and Angau, at about five miles distant, and with the wind moderate from E.N.E., worked up to the island of Lakemba, sighting the islands of Maloa and Vanna Vatu, when standing to the southward and eastward; and Eichia, Naiau, Vatu Rera, and Mango, and several other islands, when standing to the northward and eastward. We experienced no current during this passage to Lakemba, which we reached on the 11th, it then blowing strong from the east and south. Anchorage for small vessels can be obtained at this island in one or two confined bays formed by indents in the reef which surrounds it, but they are by no means safe. Having communicated with the resident Missionary, the ship standing off and on close in with the reef, which, like all those in the Fejee group, is in deep water, I made sail at 6 P.M., S.S.W., for the island of Ouo, passing the small island of Tubanielli at five miles distance, at 8 P.M.

In closing my remarks upon the *Calypso's* cruise amongst the Fejee group, I think it right to state that we found the position of all the islands, reefs, and shoals, through and amongst which we passed, very correctly laid down in Captain Wilkes' Charts of the American Ex. Ex., with the exception of Turtle Island, about which there is evidently some mistake; and the reefs and shoals within the bay of Ambau; his description, also, of the islands, with the appearance, habits, and customs of the natives, is very faithful.

It was my intention to call off Turtle Island in order to be further satisfied that the position we had placed it in was quite correct, as also the reefs attached to and off it; we could not, however, fetch it.

(To be continued.)

THE LATE FATAL EASTERLY GALES ON THE NORTH-EAST COAST AND REDCAR (VICTORIA) HARBOUR.

To the Editor of the Nautical Magazine.

SIR.—Twice have I taken up my pen to state to you why no progress has been made in Parliament with the Redcar Harbour Bill; which, after sleeping so long, was again introduced there in the Sessions of 1850. But the terrible loss of life and property in the gale of the 27th and 28th ult., all of which might have been saved had Redcar Harbour been made, will no longer allow me to suppress my sorrow at the treatment my favourite scheme has received at the hands which now take cognizance of such measures. Misled by the old selfish opponents at Stockton, a report was presented to Parliament as a de facto veto against the immediate progress of the measure, the substance of that report being, that discrepancies existed between my soundings and those upon the Admiralty Coasting Chart, (which

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is upon the exceedingly small scale of half an inch to the nautic mile and that possibly a breakwater on the north side of the Tees of a mile in length might answer the same purpose of giving refuge, and would "probably not cost more than £80,000, while the scheme for Redcar, taking into account all contingences, might amount to a much larger sum." The report, besides plunging its supporters into the quicksands at the mouth of the Tees over the North Gare Sand, above a nautic mile in length, and terminating in the quicksands and the shoal water of the South Gare, within the bar of the Tees, contains still other strong grounds for animadversion.

You, Sir, who have doubtless seen the late Captain Wm. Hewitt's survey of Redcar, will hardly recognize it from the following account of the depth of water between the Salt and East Scars in this report, viz. :—"The tidal space having two fathoms at low water by Admiralty soundings, is about 195 acres, while that having three fathoms is only 130 acres, and of course situated near the entrance of the Harbour, which is intended to be 900 feet wide, circumstances which would hardly fulfil the conditions of an easy and safe refuge for vessels of war or merchant ships of great draft of water."

This being a great misrepresentation of the natural advantages offered at Redcar for a bona fide harbour of refuge, an appeal was made to the late Lords of the Admiralty by its promoters on these alleged discrepancies; at the meeting which took place, a reference was made to Capt. Hewitt's survey; on examining which, the Hydrographer said, "Mr. Brooks is right, the chart is wrong;" following up by the observasion that it was "absurd to refer to a chart upon so small a scale as the coasting chart, 'why the figure 1 (of the 1½ fathoms sounding in dispute) actually covers a cable's length by the scale;" and the much esteemed hydrographer ended by telling one of the promoters then present that "Redcar was the best place for a refuge harbour along the whole coast."

The error on the small Admiralty Coasting Chart simply arose from the engraver having placed within the space between the Salt and East Scar rocks, or natural moles, a 1½ fathom low water sounding, the proper position of which should have been on the top of the Salt Scar Rock, but as it would not have been conspicuous on the shaded rock, it was, I consider, very properly placed in the clear space, as a warning to ships not to approach too close.

Subsequent to the clearing up of this discrepancy, an application was made to the late Lords Commissioners of the Admiralty for a survey of the locality by one of their own officers; and consequently Mr. E. K. Calver was employed on the service. The result of that survey, by that gentleman's own calculation, as appears on the face of one of his plans, is, that in lieu of there existing between the Salt and East Scar Rocks, an area of only 130 acres having three fathoms at low water of spring tides, as per report alluded to; he found 219 acres without the three fathom contour line, of which 155 acres have above four fathoms, and 94 acres above five fathoms, at low water; and further, that 187 acres have a clean bottom for mooring.

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Notwithstanding all this, Mr. Calver had also his shot at the scheme; and in a letter he wrote, speaks of "the nearly entire omission of a ledge across the entrance;" or leaving it to be inferred that a ledge of rocks existed across the mouth of the harbour, which would prevent access to it.

To this Mr. Calver's own survey gives, however, an ample refutation, it showing that for a breadth of 650 feet, from the end of the windward pier, there is a depth of from six to four fathoms at low water; and that at 760 feet from the same pier-head, there exists a depth of three fathoms, with nothing shoaler near it; that three fathoms sounding being on the outer part of the East Scar Rock, or near the head of the southern pier, which is proposed to be built on that rock. It is, however, absurd to treat the three fathom water as being in the track of ships entering the harbour, as it could only fairly be so to ships taking their departure from the bay under the lee of the harbour, or from south of the East Scar Pier!

I regret, however, to have to state, that these last proceedings have had the effect of checking any further measures towards the formation of the refuge harbour by private enterprise, and that it is my belief that the measure will again drop until public opinion will no longer permit the unprotected state of our north eastern coast from the want of completing a harbour of refuge which nature has half made for us just where it is required.

It is now twenty years since my first report was published, explaining the natural advantages for a refuge harbour at Redcar; which advantages have been repeatedly advocated by you: since then how many scores of valuable seamen have perished for want of that refuge!

The following note was appended to that report:—"On the 11th of October, 1824, a gale commenced from the E.S.E., which afterwards got round to the E.N.E.; the result was, that 113 sail of vessels were driven ashore between Scarborough and the Tyne; of this number 37 went ashore in Tees Bay. Had a harbour at Redcar then been formed, the whole of that large fleet could easily have found refuge in it." In 1834, Mr. Wm. Richmond of Tynemouth thus wrote of Redcar Harbour:—"I have seen the shores of Yorkshire, Durham, and Northumberland strewn with the wreck of the unfortunate voyagers whose ships and lives might have been saved had they had the proposed asylum under their lee to fly to."

In conclusion I have to call your attention to the awful visitation on this coast by the gale of the 27th and 28th ult. At the best of the ports (the Tyne) seven ships were wrecked, the crew of one being drowned. At Sunderland, besides much damage to others entering, ten ships were wrecked, and the crews of three drowned. In Tees Bay, as fatal examples of the danger of running for the shoal harbours of Old and West Hartlepool, nineteen vessels were wrecked, and four others foundered in the bay. Out of the crews of these ships wrecked in Tees Bay alone, or close to Redcar, it appears that about 50 lives have been lost. In addition to the above, several wrecks have taken place further south; and a number of ships which sailed from the coal

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ports the day before the gale, are yet unaccounted for, and have probably foundered.

Trusting that a sense of the importance of the subject will urge upon you the propriety of inserting this communication in the *Nautical Magazine*, that it may be read by those who have the power of putting an end to, or at least diminishing considerably, the loss of life and property, by encouraging the formation of refuge harbours instead of opposing them

I am, Sir,
Your very obedient Servant,
W. A. BROOKS,
M. Inst. C.E.

Newcastle-upon-Tyne,
5th Nov. 1852.

We annex to this appeal by Mr. Brooks the following extract from the *Stockton and Darlington Times* of the 30th October.

Tremendous Storm. Loss of Life at Sea.

One of the most disastrous storms which has occurred for many years on the North East Coast commenced on Tuesday last, and at the time we write is still raging, though somewhat abated in violence.

In the midst of the excitement and confusion which prevail in the bay of Hartlepool, where and on the north side of the Tees bay, as regards this part of the coast, the chief casualties have occurred; it is somewhat difficult to ascertain the facts necessary for giving a correct account. The following statistics may, however, be relied on, having been ascertained on Thursday and yesterday, by a trusty correspondent on the spot, and an eye witness of much he relates.

Totally lost, the brig *Amulet*, of Rochester, Capt. Grey, foundered about a mile off Seaton, on Thursday, between twelve and one o'clock, all hands lost; seven men seen in the rigging.

A laden galliot foundered about three o'clock on Thursday afternoon, off Seaton, all hands lost.

A schooner struck on the rocks off Hartlepool Heugh early on Thursday, and went to pieces, all hands lost.

A vessel foundered off Huntcliffe Foot, about four on Thursday, all hands lost.

A vessel foundered on the Hartlepool rocks about five on Thursday, all hands lost. Supposed to be the *St. Hilda.*

The brig *Northam*, of Newcastle, coal laden, struck the Longscar rocks, off Seaton, about four on Thusday, and went to pieces, seven men were saved by the Seaton lifeboat, and two drowned.

The coal laden brig *Wensleydale*, of South Shields, struck the Longscar rock, between four and five on Thursday, and speedily went to pieces. The cabin boy of this vessel was washed overboard on Wednesday night, about ten. The remaining nine of the crew are thus accounted for: the captain and the carpenter were hurled overboard from the main rigging and drowned, shortly after the ill-fated vessel struck the fatal rock; two more of the crew were afterwards

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discovered in a state of exhaustion; the bodies of three more, dead from cold and exhaustion, were taken off by the Seaton lifeboat; together with the mate and a seaman, the two sole survivors of the wreck, themselves in a state of extreme exhaustion.

In these two latter cases the daring conduct of William Hood, the Commander of the Seaton Lifeboat, and his gallant crew of sixteen (which numbered amongst them four of his own sons) is beyond all praise. It was a deliverance effected at the imminent peril of all their lives. The masts had gone, the vessels were rapidly breaking up, under the irresistible force of a tremendous sea, and the damage to the lifeboat from the large fragments of the vessels was extreme. However the crew persevered, made three attempts, and the saving of nine lives was the consequence.

The *Queen Victoria*, of Sunderland, foundered on Thursday, immediately off the entrance to the West Docks at Hartlepool, all hands saved. She had, however, previously lost a hand at sea.

The brig *Fenwick*, of Sunderland, in ballast, struck in Hartlepool bay on Thursday morning. The crew were taken out by the Old Hartlepool Lifeboat. The fishermen took possession, and subsequently took the vessel safe into the harbour.

The following vessels are on shore:—

Between Hartlepool and the West Docks, all hands saved; the *Emulous*, of Whitby, stranded on Thursday at 4 A.M.; and a Sunderland brig.

Within the half mile south of the West Dock:—

The schooner *Naiad*, of London.

The *Sophie Augustine*, of Cherbourg, France.

The *Fredericke*, a Danish vessel; will be a total wreck.

The *Cherub*, of Yarmouth.

The *Kelloe*, of Sunderland.

The *Glory*, a foreign vessel.

The bark *Brilliant*, of North Shields, timber laden from Quebec to Stockton, will become a total wreck. Carpenter washed overboard at sea.

A foreign schooner.

The *Rifleman*, of Newcastle, iron ship.

The *Britannia*, of Hartlepool, the first vessel which ever entered the Hartlepool old dock.

The *Volant*, of Blyth.

The *Sarah*, of Whitby.

The *Hardwicke*, of Sunderland, a fine new coppered brig. This vessel only missed the entrance to the West Docks by some five or six yards, and struck the south pier. She subsequently drifted along the side of the pier on shore.

It is a somewhat curious and instructive fact, that, with one or two exceptions, the whole of the vessels which bonâ fide attempted either Old Hartlepool or the West Docks, succeeded in getting in.

Ralph Ward Jackson, Esq., was on the south pier of the West Hartlepool Docks, from ten to five on Thursday, and rendered valuable aid in signalling to vessels ignorant of the port.

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As far as we could ascertain, in the excitement and confusion which prevailed, about thirteen vessels got safely into the West Docks, and some seven or eight into Old Hartlepool.

It was high water about half-past four o'clock on Thursday, and the whole of the vessels now stranded, came on shore between one and five; and the whole proceedings were witnessed by hundreds of the population on the shore. The West Hartlepool lifeboat and her gallant crew did good service in rescuing the crews of the stranded vessels enumerated above.

An inquest was held at Seaton Carew yesterday before John Settle, Esq., coroner, and a jury of 12 (Mr. Peverly, foreman) on the three bodies taken from the wreck of the *Wensleydale*, when the following verdict was returned:—"Died from exhaustion and fatigue."

In this disastrous storm from forty to fifty lives appear to have been lost in the Tees Bay, as far as the above narrative shows.

A foreign brig, said to be laden with corn, took the Tees yesterday afternoon, about half-past one o'clock. In doing so, she struck on the North Garr, and at the hour we write (7 P.M.), will, in all probability have gone to pieces. Seven of the crew are said to have been taken off by the *Contractor* steamboat, of Middlesbro', and the remaining three by the Redcar lifeboat.

A small schooner, since ascertained to be the *Acorn*, of Newcastle, went down with all hands in Sandsend-roads, on the Yorkshire coast, during the night of Wednesday.

On Thursday morning, the *Merchant*, of Hartlepool, and the *Success*, of Whitby, went on shore in making for the harbour at Bridlington Quay: crew saved. On Wednesday morning, the *Sisters*, of Harwich, was found deserted off Bridlington.

Ancient Naval Records.

Communicated by John Barrow, Esq., F.R.S., Keeper of the Records, Admiralty.

James Duke, &c. Instructions for S^r^ John Mennes, Kn^t^ Gent., of his Maj^ties^ Privy Chamber, Cap^t^ of his Maj^ties^ Ship the *Henry*, and Vice Admirall & Comand^r^ inCheife of his Maj^ties^ Fleet in the Narrow Seas for this present Sumers Expedition.

First, above all things you are to provide that God be duely served twice every day in his Maj^ties^ sayd Ship, and in every Ships Company under your charge according to the usuall Prayers & Lyturgy of the Church of England.

2. You are to take care that all men employed und^r^ your comand in this expedition live orderly & peaceably together; and to cause every Cap^t^ Mast^r^ and other Offic^r^ belonging to every Ship and Ves-

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sell in the Fleet faithfully to performe the duty of his Place. And if any Seaman or other in your Ship shall comitt murther or manslaughter, You shall send him in safe custody to the next Gaoll, where he is to be received and kept in safety, as the keepers will answer the contrary at their perills, untill he shall have his tryall according to Law. And if any shall raise faction, tumult, or conspiracy, or shall quarrell, fight, or draw blood—or weapon to that end, or be a comon Swearer, Blasphemer, Railer, Drunkard, Pilferer, or sleeps in his watch, or make noise, or not betake himself to his place of rest after the watch is sett, or shall not keep his Cabbin cleanly, or be discontented with the proporcon of Victualls assigned unto him, or shall spoyle or waste them, or any other necessary Provisions for the Ship, or shall go on Shoare without leave, or shall comitt any insolency or disorder, or be found guilty of any other crime or offence. You are to use due severity in the present punnishment and reformation thereof without delay according to the knowne Orders and Customes of the Seas. And this strict course You are to cause to be duely exercised in your owne, and in every other Ship or Vessell in the Fleet.

3. As soon as you shall come on board You are to take perfect Acc^{t} of all the cheif Officers in your Ship of the Victualls, munition, number of men, and all manner of Provisions and stores on board. And to cause the like care to be duely observed by all the Captaines and Comand^{rs} under your charge at the first entrance into their Ships or Vessells and they to give a due Acco^{t} thereof unto yourself.

4. You are to require every Captaine to take from time to time particular and weekly Accounts of the Stores of the Boatswaines & Carpenters of each of the Ships and Vessells respectively under their Comand, examining their receipts, expence, & remaines, not suffering any unnecessary waste to be made of their Provisions nor any worke to be done which shall not be needful & be directed and allowed by the sayd Captaines und^{r} their hands upon advice with the Master, Boatsw^{n} or other Officers, of the Ship, to be necessary for the Service. And you are likewise to observe y^{e} same course in your owne Ship.

5. You are to Comand every Captaine respectively of his Maj^{ties} Ships and Vessells under you to take weekly Acco^{t} from the Pursers and Stewards of their Victualls and to provide for the goodness and preservation thereof without waste, not suffering any suspected Person to bring Fresh Victualls on Board without due examination and Survey of the quallity and wholesomeness thereof.

6. By reason of the great waste and idle expense of Powder and Shot fruitlesly Shott, you are to require the Captaines and Comand^{rs} to take especiall care to take weekly Acco^{ts} of their Mast^{r} Gunners * * * and Stores contained in their Indentures, and to cause the like to be done on board your owne Ship, not permitting any part thereof to be soe wasted or imbezelled, nor any peice of Ordnance to be fired without yours or theirs particular order and direction; and then upon very necessary occasion, unless it be for Salutes, which also are to be regulated according to the rules set downe at the end of their Instructions, causing true notes to be kept of the numbers and

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kindes of every shot, that their Accoᵐᵉ may thereby be examined, which are not to be allowed in the Office of Ordnance without your or the Captⁿ approbation respectively, under your or their hands.

7. You are to keep the Complemᵗ of men allowed to their Majᵗⁱᵉˢ Ship the *Henry* full and compleate, and to take care to have a full proporcon of Mariners and Seamen, and to get and keep such as are healthfull and of able bodyes (and not Boyes or inferiour Persons) to perform his Majᵗⁱᵉˢ Service, and to cause the like care to be duely observed aboard all other Ships and Vessells of his Majᵗⁱᵉˢ Fleet, and particularly that the Captaines of them keep on board their severall Ships respectively, but the allowed number for retinue. That the Officers of each Ship have no more Servᵗˢ than the Instructions do permit them, that the Ships be not pestered with Idlers.

8. Forasmuch as the want of due and carefull musters (at Sea) is of great loss and disservice to his Majᵗⁱᵉ, I desire you to cause weekly musters to be made aboard every Ship and Vessell in the Fleet, by the Capᵗ Lieutenᵗ Maʳ and Purser of each Ship respectively, and to require them to certify the same under their hands every weeke to your Self, that you may take Order for Supply of Men where there shall be cause; but however I direct this for constᵗ course to be held by the sayd Principᴸˢ Officers of every Ship, yet it is not intended but that you should comand as oft as you please either a Generᴸ Muster of the Fleet, or a particular muster of any Ship in the same.

9. You may not suffer any Boate to goe for the Shore without your's or the Capᵗˢ speciall leave that comands her, and then also but upon necessary occasion to fetch water or the like.

10. As often as you shall have occasion to saile with his Majᵗⁱᵉˢ Fleet under your comand, you are to prescribe such Signes as shall be necessary for the better keeping Company and preventing falling foule one of another, and to appoint some place of rendezvous for the more certaine meeting together in case of separacon by tempest or otherwise. And you are also, from time to time, to appoint such Signes as you shall conceive to be most necessary for all occasions that may happen in this your Employment.

11. And whereas many sad events have happened at Sea by fire, You are to give Order to each Captaine of the Fleet that every night presently after setting the watch, to cause both Fire and Candle to be put out, and appoint one or more carefull Officʳˢ to go into the Cook-roomes and between the decks to see the same performed, and that afterwards there be no Candles in Private Cabbins, or for the Ship's use, but in Lanthornes; and you are likewise strictly to forbid taking of tobacco in any place but upon the Upper Deck, and there sparingly too.

12. It must be your principall care to preserve his Majᵗⁱᵉˢ Honour, Coasts, Jurisdictions, Territoryes and Subjects, (as much as in you lyeth,) that no Nation or People whatsoever intrude thereon, or injure any of them. And if you chance to meet in his Majᵗⁱᵉˢ Seas any Fleet or Shipps belonging to any forraigne Prince or State, you are to expect that the Admirall or Chief of them, (in acknowledgment of his

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Majtyes. Soveraignty there,) shall performe their duty and homage in passing by in striking their Topsailes, and takeing in their Flags; and if they refuse to do it, and offer to resist, You are to force them thereto, and to bring them in to answer such their high contempt and presumption, and in any wise You are not to suffer any dishonour to be done to his Majtie or derogatlon to his power or Soveraignty in those Seas. And if any of their Majties. Subjects shall so much forgett their duty as not to strike in passing by their Majties. Shipps, You are either to punish the Comandr. of such Shipp your Self upon the Place, or to give me advertisemt. of his Name, Offence, and Place of aboad, that I may do it here exemplarily.

13. You are not to permit or suffer any Men of War to fight with each other, or Man of War with Merchant, or Merchant with Merchant, in the presence of his Majties. Ships, in any part of his Seas, for the freer and better maintenance of trade and comerce through the same, for that all men trading or Sailing within those his Majties. Seas, justly take themselves to be under the King's protection, and therefore his Majtie. in honour and justice will protect them from injury or violence.

14. And if you shall meet with any Strangers Ships (being Men of War) rideing in any of his Majties. Roades, Bayes, or Harbours with Counterfeit colours, (which is practised to intrap such Forreigners as trade on his Majties. Coasts,) you are to cause them to be apprehended and brought into some of his Majties. Ports to answer such their presumption and offence.

15. When any of your Fleet apprehend any Pirates, Sea Rovers, or other delinquents at Sea, You are to cause them to be kept in safe custody, or else to send them to the next gaoll, where they are to be received and safely kept, and to have a tryall according to Law, as the Keepers will answer the contrary at their Perills.

16. Such Ships and Goods as You, or any under your Comand, shall recover or take from Pirates, Sea Rovers, or other Offenders, You are to cause to be preserved and kept in Specie, taking care that no part thereof be spoiled, wasted, or imbezelled, and comanding the Hatches and Holds to be spiked down, and the sayd Ships and Goods to be sent by some carefull and honest men into some of his Majties. Ports or Harbours for his Majties. use, advertising me thereof.

17. As you meet with any Men of War, Merchants, or other Ships or Vessells belonging to any Forraign Prince or State, either at Sea, or in any Roade or other place where You or any of his Majties. Fleet shall happen to come, You are to send to see whether there be any of Majties. Subjects on board them. And if any Seamen, Gunners, Pilots, or Mariners, either English, Scotch, or Irish, shall be found on board any of them, You are not only to cause such of his Majties. Subjects to be taken forth, comitted, or disposed on Board or otherwise, in such sort as they be forthcoming to answer their contempt to his Majties. Proclamacon in that kind, but also friendly to admonish the Captaine, or other Principll. Officers or Comandrs. in such Forraign Shipps or Vessels, that they receive not nor entertain on

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Board any of their Ships no more of his Majtie's. said subjects, that his Majtie. may have no cause to resent it at their hands. But you are to have an especiall care that no man be permitted to go on board the Ships or Vessells of any of his Majtie's. Friends or Allyes to search for such his Majtie's. Subjects as aforesayd, for whose faire and honest carriage You or the Capt. that sends them will not answer. And You are not in anywise to suffer any violence, wrong, or interruption to be given by any of Your Fleet to any of his Majtie's. Friends or Allyes behaving themselves fairly and respectively to You and his Majtie's. Fleet.

18. You are to use Your best endeavour that none of his Majtie's. Subjects whatsoever at Sea or elsewhere, within your comand, do buy, sell, or barter with Pirates or Sea Rovers, or any other that presume to dispose of the Goods of Merchants before they come to their proper Port, and takeing notice of all such as doe or have done soe, You are to send me in writing their names and Places of aboade, together with the particulars of their Offences, and such examinacons and Proofes as You have agt. them, that Order may be taken for the punnishment of them according to Justice.

19. If any Man of Warr or other in anyof their Majtie's. Roades, Harbours, or Coast, shall offer any violence by unduely taking out any Ships or Vessells Goods or Merchandizes, of what nature soever, or shall attempt or endeavour to entice or carry away any of his Majtie's. Subjects by any ways whatsoever, or committ any other insolency, You shall do your best to recover the same from them, and reforme the abuses, either by due admonition, or (if that will not serve) by bringing the Offendr. to answer to Justice, preserving by all means the honour of his Majtie. from such insolencies as much as in You lieth, having alwayes a due regard to the amity between his Majtie's. Friends and Allyes.

20. And because it hath never been held honourable for the Capt. of any of Vessell in his Majtie's. Service to become an ordinary transporter of Goods or Passengers, not so much as Persons of Quallity, without speciall order from such Superiour Powers as may comand the same, You are to give direction to all the Chief Comandrs. of the Fleet which shall be in your charge, that they be very carefull not to take any Goods or Passengers on Board till they have Order and permission so to doe; except such as shall make it appeare they are in Majtie's. Service.

21. For regulating Salutes, this Ordr. following is to be observed by all the Captaines of the Fleet:—

A Capt. of a Ship of the 2d Rancke, being neither Admirall, Vice Admirall, nor Reer Admirall, at his first coming and saluting his Admirall he is to give eleven Peices, his Vice Admirall nine, and his Reer Admirall seven, and the other proportionably less by two according to their ranckes.

	At his coming on board.	At his landing.
When a Ship of the 2d Rancke shall carry an Ambassador, Duke, or Nobleman	11	15
When a Knight, Lady, or Gent. of Quallity	7	11

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The other Ships are to give less by two, according to their ranckes and number of Ordnance.

When an Admirall of a Forraign Nation is met with, he is to be answered with the like number by all the Ships that he shall salute.

If a Vice Admirall, then the Admirall is to answer him with two less.

But the Vice Admirall, Reer Admirall, and as many of the rest as he shall salute, shall give him the like number.

If a Reer Admirall, then the Admir^{ll}. and Vice Adm^{ll}. to answer him with two less, but if he shall salute the Reer Admir^{ll}. or any of the rest, he is to be answered with the like number.

When a Man of War or Merchantman of another nation, or of our owne, salute any of the King's Ships, he is to be answered by two less.

22. And because there cannot be given such Gener^{ll}. Instructions as will serve upon all occasions that may happen cencerning his Maj$^{tie's}$. Service, but y^{t}. of necessity something must be left to the discretion of the Comand^{r}. in Chief to manage as cause shall require, You are in all such cases to use your best care, wisdom, and circumspeccon for the Advancement of his Maj$^{tie's}$. Honour, and furtherance of his Service. Dat. June, 1661.

LIFEBOATS.

This is a subject which should engage the Christian sympathies of all, instead of exciting the prejudice of any; and yet it has been very unfairly treated. There has been too much of temper and too little of calm reflective reasoning. The benevolent patronage of a sailor nobleman, and the liberality evinced in the encouragement of a spirit of emulation among the builders of lifeboats, should have elicited a different result to that which we have painfully witnessed in the recriminations which have appeared through the medium of the press since the Northumberland prize was awarded. If we ask, what are the essential qualities required? it is generally answered in brief, as rowing, sailing, strength, and security. Now these tests were examined by officers and gentlemen of experience competent to judge, if science, seamanship, and practical knowledge could secure an impartial judgment. And yet, such have been the criticisms of interested parties, as to create a mischievous distrust of all lifeboats, in the minds of the maritime population generally.

The excellent qualities of the prize lifeboat have been admitted and proved. Surely it would be more generous to try and improve upon her, than to pull her to pieces. Let us, however, examine the essentials in detail: and first, as to rowing; a boat capable of being propelled easily through the water and over the sea to the lift of her oars. Now this property certainly attaches to a Yarmouth coble in a

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greatly superior degree to our Kentish luggers, which, from their great width of beam in proportion to their length, are strictly speaking sailing vessels, and that only, and therefore they carry a four-oared boat for rowing purposes. Thus, when they cannot approach a wreck under sail, or veer away upon their anchor and cable down to her, they anchor to leeward, man their four-oared boats, and row up to the wreck head to wind and sea, each boat ready to pick up the crew of either of her consorts in the event of a capsize. Who that saw the wreck of the *Hindostan* on Margate Sand, will ever forget the inspiriting shout which swept across the raging waters as the luggers came to an anchor in succession. The poor sailors and soldiers clinging to yards and spars, saw that they could not approach them, but that they were determined not to leave them, for nobly was that British cheer replied to, as they prepared to out boats. As the tide fell, the water became smoother, and they were saved!

In like manner a good telescope enabled us to witness a similar scene with the brig *Shepherdess*, on the Goodwin Sand. And now to our argument. The lifeboat would have rowed up with equal facility, and will any one presume to say that her presence would not give additional confidence to the boats' crews of the luggers and their smaller rowing boats? Will they contemplate a troop ship or emigrant ship, crowded with helpless beings, and not wish for the powerful auxiliary to every other means which a lifeboat provides? surely not. Thus far then her greater capacity and rowing qualities are essential and desirable, and this as a Yarmouth coble she possesses in perfection.

But, can sailing qualities be imparted to a rowing boat? They can, as witness our great galleys, among the swiftest boats in England, and the safest under their lifting lug sails, when properly handled; but there must be no belaying sheets, and haulyards, or sailing them gunwale under. Now it is evident that different localities have different requirements. If the dangers lie close along shore, there is no occasion for sails; but it often happens with us, that after a stormy night, day breaks with less wind, but a heavy sea; and an unfortunate vessel is dimly seen in the horizon, eight or ten miles distant, on the off part of the extended Goodwin sand. Every moment is precious, and who would not wish for a lifeboat, that would fly to their assistance; a short period of time may decide their fate, and the Northumberland lifeboat will take her part with the luggers as a sailing vessel.

The next essential is strength, to enable them to lie alongside when practicable; and strength is most assuredly given at the expense of lightness. No question can be raised upon this score, and we pass on to that quality which is the distinguishing characteristic of lifeboats, security. Sink they cannot; their air-chambers render it impossible; but one or more may be stove, or leak. What matter? they are filled with air-blown ox-bladders, properly prepared and tarred in the same durable manner that the fishermen attach them as buoys to their nets, and except the lifeboat is shattered to fragments to release them, she cannot sink. Now two ox-bladders inflated will support a human subject, and there are in the air-boxes of the prize lifeboat 460 blad-

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ders, equal to the support of three times the number of people that she could possibly take in. And this reminds me of an objection to sails, namely, that they occupy space, or lumber a boat up. There is an easy seaman-like remedy for this, should it happen. Stream them, lashed well together, and the luggers would pick them up; or anchor them till the service is over, then recover them yourself. But to return to security. The boat cannot sink, but she may upset. I do not believe it, if properly handled; but the self-righting properties of these boats under oars is indisputable: and that any seaman would allow a boat to remain an instant on her beam ends without cutting away her masts, is to me passing strange. If the prize boat's crew do not do so, it will not be for want of sharp axes to have taken care of that. Then as to auxiliary securities. The prize lifeboat has two angular cork life-preservers, capable of sustaining four men each, which are fitted in the boat's shape, one in the bow, the other abaft. These are fitted with rope links, (or grummets,) through which any number of her light fir oars may be rove and lashed, and you have at once a life-raft as an auxiliary for her own crew, in case of accident, or others, (these were constructed under my direction, and are very simple,) to impart additional confidence. There are also four of Carter's circular life-buoys snugly stowed in her for service; and it is worthy of remark, that oars or light spars rove through these also, and firmly lashed, would support at least eight seamen till they could be rescued. Every one of the crew of the lifeboat is provided with a Carter life-belt; and I would strongly impress upon the minds of those fearless men (who are too apt to neglect them) that they are no inconvenience or hindrance to their exertions, while they protect the most vulnerable part of the body from accident or bruises.

I am in the habit of hearing from these reckless spirits, "Oh, Sir, ven our luggers can't go to a wreck, it's a bad time on't the poor fellurs 'ell have." But I tell them, that the presence of a lifeboat which cannot founder will give them increased confidence, stimulate their exertions, and in so righteous a cause, under God's good providence, may one day be the means of preserving even a lugger's crew from the jaws of an untimely death. The discouragement recently given by recklessness and simple mismanagement, ought to be no check to the onward progress in the construction of lifeboats; rather let us adopt one of the immortal Nelson's favourite mottoes:—

"The wise and active conquer difficulties by daring to attempt them; sloth and folly shiver and shrink at sight of toil and hazard, and make the impossibilities they fear."

K. B. MARTIN,
Harbour Master, R. H., Ramsgate.

To the Editor of the Nautical Magazine.

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Captain Inglefield's Voyage in the "Isabel," *Screw Discovery Vessel, belonging to Lady Franklin, in the Summer of* 1852.

Sir John Barrow, who has deservedly been considered the highest authority on all matters connected with arctic discovery, remarks, in his *History of Voyages of Discovery and Remarks on the Arctic Regions*, that a voyage round the shores of Davis Straits and Baffins Bay is but a few months pleasure voyage which has been performed, centuries ago, in little ships of thirty to fifty tons, "It is a voyage," he says, "which any two of the Yacht Club would easily accomplish in five months, and during the time might run far enough up Sir Thomas Smiths Sound to ascertain the insularity or otherwise of Old Greenland.

There are among the members of that club gentlemen sufficiently high spirited to undertake to solve that question and prove the accuracy of old Burleigh, and thus remove a blot from the geography of Northern Europe."

One little vessel the fair *Isabel*, has now performed this voyage in *four* months, and although we cannot exactly call it a pleasure voyage, being attended with much hard labour and requiring consummate skill, yet Captain Inglefield has shown us what an active, zealous and energetic officer can accomplish with less means even than those spoken of by Sir John Barrow, and by the aid of a small high pressure engine.

With the highest respect for the opinion of Sir John Barrow, we never thought that what he thus predicted could have ever been accomplished and the exploit of Captain Inglefield must ever be looked upon as among the most remarkable in Arctic History.

He has opened out to us an entirely new feature in Arctic Geography, from which the most important results may be anticipated, and has in all probability passed through *one* of the great entrances into the Polar Basin, the existence of which may ere long verify another of the remarkable predictions of Sir John Barrow.

The following letter from Captain Inglefield is addressed to Mr. Barrow, of the Admiralty, and with his permission is placed upon our pages. It will be read with great interest, and we feel confident that every one will agree that we have not in the least degree over rated the value and importance of Captain Inglefield's Discoveries. He has penetrated beyond Baffin and Bylot into the unknown space upon our charts, and has led the way to further discoveries, which we hope to see vigorously followed up by our Own Country.

Isabel, off Ponds Bay, Sept. 14th, 1852.

My Dear Barrow,—Having written at much length to Lady Franklin and Sir Francis Beaufort, I next feel that to you my pen is bound in service, and though I cannot promise to recapitulate all I have said to them, still I will have ready a few lines to send by the first whaler

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I may meet on my homeward route, viâ the West Coast of Baffin Bay and Labrador.

In a few words I may tell you that I have communicated with natives near Dudley Digges, that I have steamed all round Wolstenholme Sound, and thoroughly examined Omenak,* disinterring the dead and pulling down cairns without finding the slightest traces of Franklin. I then steered away for Whale Sound and found a settlement twenty-five miles inside; the people strong and healthy. I found this Sound or rather Inlet to be composed of Islands on the north shore, and at the bottom two great openings which admitted the eye far away into blue open water, the sky illumined by the rays of the setting sun, told most truly that no land, at least for many miles, lay in that direction. I then, sailing round the largest Island, which I named after his Grace the Duke of Northumberland, proceeded to Smith Sound, which I reached without difficulty, and which I found to be about thirty-six miles across the entrance, instead of the puny ten marked in the charts.

It was a lovely morning, the 27th of August, when within pistol-shot of Cape Alexander, we beheld before our enchanted gaze open water far far as the eye could reach, and extending between the two extremes of land we beheld for about seven or eight points of the compass. The Cape itself was bright with a *green* moss which covered its sides, and by all it was observed that the land assumed a blacker appearance as we neared the highest latitude we attained 78° 35′. I shall barely write all I feel I have to say if I dwell more upon my views and feelings upon entering this Polar Sea, which I have no doubt in my own mind it really is. We were fairly blown out of it without my being able to land, and without seeing anything like a trace of cairn or beacon.

The gale that forced us away kept me hove to, in tempests of snow and wind, for two days, when, in trying to hug the west shore, to search with our glasses what the land ice prevented our doing in any other way, I unfortunately drifted into the lee pack, and with much difficulty we extricated ourselves. Jones Sound was my next point, and this I searched as far to the westward as long. 84° in the ship, though 85° was fairly reached with our glasses. Thick fog, the lateness of the season, (it being the 1st of September,) and the inhospitable appearance of the shores, presenting nothing that a ship could have made winter quarters in; these, with a fresh gale from the westward, and ice driving fast out of the sound, determined me upon bearing up, not so much from necessity as prudence. No mark or sign could I trace, and the shore on both sides was well examined; all seemed to defy the foot of man, and at our farthest point the land trended away to the north-west on the north shore, and followed on west on the south shore. This place examined, I determined to ac-

* The spot where Adam Beck reported the murder, "most strange, most foul, and most unnatural," (as in the best it was,) of the crews of the *Erebus* and *Terror*.

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quaint Sir Edward Belcher with the result of my researches, and to leave him a track chart of my voyage. I arrived at Beechey Island on the 7th of September, where the *North Star* was found safely secured waiting daily for the ice to seal them in for the winter; they were much pleased to get their letters and newspapers, and I gave them twelve hours to prepare their replies. In the meantime I visited the Island, which was thickly clad with snow. I must not enter into all my thoughts and feelings now.

It was one o'clock ere we got on board; I went to the *North Star* to take my leave of Pullen and the officers, and putting their despatches under my arm, was soon on board the fair *Isabel* and steaming out into the Sound.

I must only now add to you that after some days of baffling and adverse winds we have reached thus far. To-day, Tuesday the 14th, at six o'clock, I landed on Cape Bowen, and, finding nothing but the track of a gigantic bear and some foxes, obtained the dip, some specimens of rock for Sir Roderick, and erecting a cairn with a notice of our visit, I went on board and now we are steaming away south. At dark each night I fire a gun and throw up two rockets, looking out sharp for fires or signals on shore. The west coast I hope, under God's blessing, to search as scrupulously as I have been able to do the northern; and then, the object of my voyage being accomplished, I shall, if possible spare myself the unnecessary risk, expense, and anxiety of a winter, and thus return, God willing, to England; and I hope and trust that all will be satisfied with what, under special aid from above, I have been enabled to perform. Farewell, my very kind friend, and believe me to be

Yours very sincerely,
(Signed) E. A. INGLEFIELD.

John Barrow, Esq.

October 22nd, Cape Farewell.

P.S.—We are on our homeward voyage. The gales, dark nights, and winter weather, precluding the possibility of even sighting the west shores. I shall hope to see you shortly after your receipt of this and therefore will now only add my best wishes.

Sir E. Belcher's Search for Franklin.

It will be remembered that the *Prince Albert*, commanded by Mr. Kennedy, brought intelligence from Sir E. Belcher's squadron down to the 18th August, and it was the subject of universal remark that she brought very few letters from the squadron, considering the long time the ships had been out. The whalers, however, are now daily arriving, and with them packets of letters, which, although of early date, are nevertheless interesting, as furnishing readable details of the progress of Sir E. Belcher's squadron from England. We subjoin one:—

"H.M. Ship *Resolute*, Melville Bay, July 1.

"SIR,—I consider it as no more than my duty that I should inform you of the

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steps taken by Sir Edward Belcher, commanding the Arctic Expedition, since leaving Greenhithe up to the present time, and as this is the last opportunity of so doing before winter closes in, I now take advantage of it.

"The ships left Greenhithe on the 21st April, and on the 25th dropped anchor off Sheerness. We left Sheerness on the 28th in tow of the *Basilisk* and *Desperate* steam-vessels, and kept in tow till the 2nd of May, having been towed 913 miles, and the weather preventing our being towed further. On the 5th we had to batten down, and on the 7th had to remove some of our deck load on to the lower deck, against the side, placing the mess tables fore and aft on it. On the 8th the steamers closed, cheered, and left us for England. On the 9th we had to batten down again. On the 20th we rounded Cape Farewell, and first saw ice. On the 21st we sighted Cape Desolation; on the 28th the thermometer stood at 27°, and on the 29th we came to anchor at Whale Fish Islands, and were visited by the Esquimaux. On the 5th of June we left the islands for Lievely (?), after refitting our boats. The same evening we were off Lieveley, the *Pioneer* fouled an iceberg, and carried away her mizenmast; the *Assistance* and *North Star* touched the ground, the former losing a piece of false keel. On the 9th of June we left Lieveley for Upernavick, going by way of Waigas to search for coal, of which a little was found. On the 19th of June we arrived at Upernavick, and made fast to an iceberg. In the evening the berg slued, and we broke adrift and fouled the *Pioneer*, carrying away our jibboom and foretopmast. The next day all the ships stood out to sea. On the 22nd we took the pack, and on the 23rd the tenders took us in tow, but had to bring up often on account of the ice. On the 26th the floe came down unexpectedly, giving us a serious nip; being too late to unship the rudder, it was crushed to pieces, much straining the braces and ports, and pulling off some of the false keel. Being unable to help our own ship, the crew was sent to the *Assistance*, to help her to cut a dock, which having done, we returned to our own ship; by which time the floe had returned. We unshipped the remains of the rudder, and unstowed the spare one, and got it ready for shipping. The ship made no water, though she had been lifted out of water three or four feet, and listed down to her ice chocks. On the 27th a large piece of ice came out from under our bottom, which had been forced there during the nip. On the 29th sighted two whalers from the crow's nest. On the 30th found a wreck alongside the floe; anchored the ships, and went to the wreck for firewood; found the ship to be the *Regalia*, of Kirkaldy; she that had been nipped at the same time the *Resolute* was. We got several spars from the wreck, and also part of her mainmast to make us a rudder, after which she was towed out and blown up. The *St. Andrew*, of Aberdeen, towed up to us, and was taken in tow by the tenders astern. The same evening we fell in with 13 more whalers, among which the *Regalia's* crew were. We are now in dock, within half a mile of them, waiting for the ice to open to let us cross to Lancaster Sound. I have now given you a short account of our voyage. The ice is considered to be very clear and solid, giving us good hopes of reaching a long distance before we are frozen in, which we expect will be about the second week in September.

"Thank God I have so far enjoyed excellent health and spirits, and hope, with His blessing, to continue to do so."

The Search for Sir John Franklin—To Captain Kennedy.

Admiralty, October 15, 1852.

SIR,—I have received and laid before my Lords Commissioners of the Admiralty your letter of the 9th instant, reporting your arrival from the Arctic seas, and I am to acquaint you that my Lords are greatly obliged for the valuable information you have been the means of conveying to them of the

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squadron under Capt, Sir Edward Belcher's orders, and their Lordships have further to thank you for the interesting details of your own proceedings.

My Lords would wish to express their sense of the exertions made by you in your arduous efforts to discover traces of the missing expedition, and would be glad, should the opportunity offer, if you would convey to your gallant comrade, Mons. Bellot, the like assurance of their Lordships' admiration of the generous ardour with which that officer's valuable services were devoted to the humane and honourable enterprise in which you were both engaged.

I am, Sir, your most obedient servant,
(Signed) W. A. B. HAMILTON.

To Mr. William Kennedy, East Islington Institution.

Extract of a Private Letter from an Officer of H.M.S. "North Star."
Beechey Island, August 15, 1852.

"After leaving Cape York, we had a fine run across Baffin Bay, and reached Cape Horsburgh on the 3rd. Then we were met with light variable and foul winds, and did not reach this before the morning of the 9th. *Assistance* or *Pioneer* had not arrived. *Intrepid* was dispatched to look after them. She fell in with her off Cape Fellfort, and towed her up here on the 12th. In the meantime provisions were taken out of *North Star*. *Intrepid* went up the Wellington Channel, and made a most favourable report of it. I have not the least doubt of *Assistance* getting, if not through, at least to Sir Robert Inglis Bay.

"Sir Edward made a speech to us all last evening on the shore. The men collected round the union jack. After his speech a prayer for our success, and followed by three hearty cheers. All hands well, and in the best spirits. Our prospects are most favourable at this moment. There is a good deal of loose ice collecting about us, no doubt from a southerly wind in the offing. *Intrepid* is getting her steam up, and will be off in an hour (2 P.M.)

"We have turned every stone within ten miles of this without finding any record, which is incomprehensible to me, unless, indeed, they have built the cairn with an intention of leaving a record before starting, but the ice opened and they bolted without having time; for it would take at least an hour and a half to reach the summit of Beechey Island, where they had built the cairn. For instance, *Assistance* sailed at midnight on the 14th, with no ice in sight, and now we have it all round us in great quantities. White whales are most numerous here, as well as bears."

Extract of a Private Letter from an Officer serving in H.M.S. "North Star."

"*North Star*, Beechey Island, August 18, 1852.

"On the 23rd of July (in recapitulation, probably, of what you already know) we parted company with the *Assistance* and *Pioneer* in a thick fog, and, with the *Resolute*, *Intrepid*, and *Alexander*, whaler, in tow, made the best of our way northward, cutting, blasting, and pushing on by every opening, keeping to the land floe, which seems to be the great secret of Arctic navigation. On the 31st we came up with the track of the *Assistance* and *Pioneer*, and on the 1st of August made the north water, to our great joy, about five miles to the southward of Cape York, where we landed and found a party of Esquimaux in their summer tents. On heaving in sight they all ran down to the floe, skipping and capering with delight, and on landing gave us a boisterous welcome. They completely refuted the common opinion of the Esquimaux temper, and which characterises them as lethargic, sullen, and stupid, for they were all, unexceptionably, the most vivacious, good-natured, and apparently sagacious race of savages on the face of the globe. In appearance only they are heavy, being much under the average height, fat, and thick set. Their features have all the characteristics of the Mongolian race, but their noses were

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almost hid between the mass of fat on either side. This, by-the-bye, must be an old subject to you. Well, we stood along the coast as far as 76° to clear the loose ice, and have a good opportunity of seeing the formation of the ice-bergs from the several glaciers. Of the officers of the expedition, now that they are all known to each other, and their real characters are discovered, which could not be ascertained before leaving, one cannot speak in too glowing terms. Without a single exception, I think that they are a truly excellent set of men; they all pull together, and on all occasions there is a display of right good feeling, which is a most cheering thing to witness. In highest praise of Commanders Richards and M'Clintock, Lieutenant Osborn, Lieutenant Meechan, all unite; in fact, they are all as fine a set of fellows as, I think, could well be collected together; and by us their departure has been greatly felt. I must not forget to mention that before leaving, Lieutenant Osborn begged me, should I have an opportunity, not to forget his kind remembrances to you, and to explain the state of confusion they were in in coaling and provisioning, thereby preventing their sending you a line. In fact, he only sent a few words to his wife, which I took charge of. On the 14th *Assistance* sailed, and the following day *Resolute*. May every success attend them. There is, even here, a small field for us of the *North Star*, certainly, of geographical research; however, all that comes to our humble lot I trust we shall perform as satisfactorily as our more honoured brethren. While I think of it, I must give you an instance of the pleasure that the often-used expression, 'Remember me to,' is capable of giving, as it particularly struck me, showing the value of these little courtesies. Yesterday I heard Mr. Kennedy tell Bellot, the Frenchman, that he had received a letter from you, not mentioning any particulars, and I observed the worthy fellow looked rather disappointed. Soon after, however, Kennedy told him that you had desired to be remembered to him; and if you could have witnessed the change that those few words caused, you would have been amply rewarded for your considerate recollection of him. He is far too modest to sound his own praises, or even, I think, to relate his services. I am unable to do him justice, but the more I hear of him, and the better I become acquainted with him, the higher he rises in my esteem and respect. He is a high-minded, chivalrous Frenchman, and fully sustains one's brightest view of the sons of La Belle France. Notwithstanding his wish to return home to his family, he has not allowed it to influence him in the least in the difficult question by him yet undecided, whether he should remain out or return home in the *Prince Albert*. He, with the others, equally suffered from scurvy in their trying expedition. They have undergone great hardships. Old John (I forget his name, memorable as it is)* assured me that without him they could not have accomplished what they have, giving every credit which is due of course to Mr. Kennedy, who is an unwearied and most energetic traveller; but M. Bellott appears to possess far more than average scientific attainments, though he has had little time to devote to such pursuits. His great fear is, that if he returns home Lady Franklin will think that he is deserting the cause; but we have nearly succeeded in convincing him we have sufficient officers here to carry out anything, and that the cause would not suffer. His Government have only granted him a year's leave, yet this has no weight in inducing him to abandoo what he conceives to be a higher duty. I am at a loss indeed to express all I feel at his conduct. He is on half-pay, and we on double pay; he in a professional point of view gains nothing by serving here, we perhaps may. He is devoted, heart and soul, to the cause of Sir John Franklin, and we are convinced he has no other object in view. He is indeed deserving of our warmest thanks."

* John Hepburn, who saved the lives of Franklin, Back, and Richardson, on the shore of the Arctic seas, by his devoted attention to them in their unparalleled sufferings.—(Vide "Franklin's Narrative.")

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The Search for Sir John Franklin.

The following are the Admiralty instructions to Sir Edward Belcher, relative to his search for Sir John Franklin :—

1. Having appointed you to the command of the Expedition (to consist of the ships *Assistance*, *Resolute*, *Pioneer*, *Intrepid*, and *North Star*), preparing for the further search of Sir John Franklin, you are, whenever such ships shall be in all respects ready to put to sea, and proceeding down channel, or north about, make the best of your way to Barrow Strait, calling at Disco (if in your way) for such replenishments as the place affords, and a supply of dogs for sledging purposes.

2. We have entrusted you with this command, in the full persuasion of your thorough acquaintance with its obligations, and of your judgment and ability to meet them.

3. We do not, therefore, consider it necessary to encumber you with minute instructions for your guidance at each step of your proceedings; but furnishing you with papers which point out the views of the Admiralty, as successive expeditions have been despatched from this country, and those also relative to the difficulties occurring to oppose those views, we leave it to you to decide, as the case shall present itself.

4. We deem it right, however, that a certain course of proceedings should be pointed out to you; and adopting the recommendation of the Committee appointed in October, 1851, to inquire and report upon a previous Expedition, the plan of future operations there proposed is to be considered as the basis of your proceedings. By that plan, Beechy Island is the point indicated as the basis of your operations, and you are to consider it as the grand rendezvous to which you are to push forward, there to establish the *North Star* as a general depot.

5. Arrived at this point, two great objects will engage your attention:

I. The endeavouring to pass up Wellington Channel with one sailing vessel and one steamer.

II. The advance of a similar force towards Melville Island.

6. The object of the first of these expeditions will be the endeavour to recover those traces of Sir John Franklin which ceased at Cape Bowden, to the north of Beechy Island; and to follow up such traces if they should be found. The object of the other expedition will be, to deposit, if possible, at Winter Harbour, Melville Island, or failing that, at Byam Martin Island, a supply of provisions, fuel, and clothing, for any parties that might reach such positions from Captain Collinson's or Captain M'Clure's ships.

7. As regards the first-named expedition, and the possible contingency of coming upon Sir John Franklin's track, we cannot too strongly impress upon you the necessity of your establishing along your line of route, cachettes of provisions sufficient to supply your crews, and those of the missing ships, should any accident happen to your own vessels, and render it necessary for you to return without them to the general rendezvous at Beechy Island; and you will be most careful along the line of such route, as well as in every other direction you may have to take to avail yourself of every remarkable promontory, point of land, or other distinctive locality, to deposit exact notices of your condition and intended proceedings; and you are to give positive orders that these notices or records are to be deposited 10 feet true north of the cairn or staff, and likewise beneath or in the cairn itself.

8. With regard to the expedition to be despatched towards Melville Island, it is scarcely to be contemplated that, under the most favourable circumstances, more could be done in the first season than to reach that point; and the Officer

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in charge of that service will of course have to take into account the having to winter in that quarter.

9. His earliest attention, in that case, in the ensuing spring, will be—1st. The depositing such supplies at Melville Island as he can spare, or endeavouring to convey them thither by sledges, if he should not reach the island with his ships; and 2nd. The detaching travelling parties in a westerly direction for the combined purpose of a search for traces of Sir John Franklin, and of depositing notices in conspicuous situations as to where the supplies are left, but being at the same time strictly enjoined to return to their ships before the usual period of the breaking up of the ice, in order that such ships may return to their rendezvous at Beechy Island, or otherwise prepare for quitting Lancaster Sound to return to England, according as the supplies on board of his ships, and the length of time consumed in the above service shall require.

10. And here we think it necessary more particularly to call your attention to the instructions to be given by you to the Officer charged with this branch of the expedition; for whilst there is a possibility of your calculating on an early return of such Officer from Melville Island, in the summer of 1853, and of his being able to afford you support in any particular direction, it is, on the other hand, not improbable that, from a prolonged detention to the westward, it may be his bounden duty not to hazard a further stay in those seas, but to make the best of his way home; in which case he must endeavour to communicate with the rendezvous at Beechy Island, before finally quitting Barrows Strait, in order to obtain information of the other ships, and to deposit records of his proceedings.

11. He should, therefore, be made to understand the nature of the responsibility that devolves upon him, both as to the execution of his orders, in the first instance, and determining the point at which the power of compliance with those orders ceases.

12. It is, of course, possible that seasons such as were experienced by the expedition in 1850-51 may again occur to prevent a passage by ships up Wellington Channel, or to the west of Griffith Island, and, under such circumstances, it will be for you to consider how far it might serve any useful purpose to undertake an examination by travelling parties from Baring Bay, or Prince Alfred Bay, in the direction of Jones's Sound, in addition to those which it will be your duty to send out to the north and north-west for traces of Sir John Franklin, in the direction of Queen's Channel.

13. Our instructions, therefore, are without reference to the possible circumstance of records still being found at Beechy Island, or elsewhere (and for which it will be your duty to search), at a certain distance from the respective cairns, where it has been stated it was Sir John Franklin's custom to deposit them;* and if by such records it should prove that Sir John Franklin proceeded to the eastward out of Lancaster Sound, after he wintered at Beechy Island in 1845-46, you will still continue to push forward two of your ships towards Melville Island, as already directed by us, and with the other two you are to act as circumstances may render necessary, depending on the information which those records may convey; and adverting to the report of two ships having been seen on the ice in the North Atlantic, in the spring of 1851, we think it expedient to draw your attention to this subject, that you may adopt such steps on your way from Baffin Bay, with reference to search and inquiry on the shores of Davis Straits, as you may consider most advisable under the circumstances above stated, and the information the records may convey.

14. You are aware of the deposit of stores and provisions at Port Leopold, and of the steam launch left there by Sir James Ross; you are at liberty to

* The piece of tin or copper, said, by Adam Beck, to have been dropped from a staff, should also be looked for. See Evidence before Arctic Committee.

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employ that vessel in any way that her services may be made available; but with reference to the store of provisions at Port Leopold, and also those for 100 men, which were landed by Mr. Saunders on an island in Navy Board Inlet, it is our directions that such provisions and stores shall on no account be touched by any of the vessels under your orders, unless compelled to do so by absolute necessity.

15. We have furnished you with copies of these instructions, which you are to deliver to the Captain and Officers in command of vessels under your orders. And we deem it necessary that you should be directed to communicate freely and unreservedly with your second in command, and the Officers in charge of the other ships, on all points connected with the expedition, keeping them acquainted with your views and intentions, that, in case of an accident happening to yourself, or a separation of the ships, these Officers may be fully aware of the courses of proceedings intended to be adopted by you, and when the ships are separated from you for the purpose of carrying out our orders, the same unreserved intercourse and communication is to be maintained between the Officers in command of the respective ships.

16. You are no doubt aware of the *Prince Albert*, private vessel, being engaged in a like search in the Arctic seas; you are to afford that vessel every aid and assistance, in the event of falling in with her, but you are in no way to interfere with her orders to take her under your charge.

17 The various logs and private journals, with drawings, plans, &c., are to be sent to this office, on the return of the expedition. And you are to be careful that from the date of your parting company with the ships sent to assist in towing you, your own letters to our Secretary, together with those of the Officers addressing you, are duly numbered as well as dated; and you are invariably, should any opportunity offer, to leave letters for us at such places as Cape Warrender, Ponds Bay, &c., provided no delay be incurred thereby.

18. Your ships have been fully equipped for the service they are going upon, and it has been our desire that you should be provided with every means and resource that might be made available. We have an entire reliance on the best use and application of those means on your part, and we have equal confidence in the care to be exercised by you for those employed under your orders; but there is one object which, in the exercise of that care, will naturally engage your constant attention, and that is, the safe return of your party to this country.

19. We are sensible, however, that notwithstanding a wish to keep this part of your duty prominently in mind, yet, that an ardent desire to accomplish the object of your mission, added to a generous sympathy for your missing countrymen, may prevail in some degree to carry you beyond the limits of a cautious prudence.

20. You are, therefore, distinctly to understand our directions to be, that the several ships under your orders shall each be on its way home, and to the eastwood of Barrow Strait, whenever their stock of provisions shall have been reduced to twelve months' full allowance; and commending you, and those employed under you, to the providence of God, we trust that success may crown your efforts, and that you may be the means of affording succour to those of our countrymen whose absence we have so long deplored.

Given under our hands this 16th day of April, 1852.

NORTHUMBERLAND.
HYDE PARKER.
PHIPPS HORNBY.
THOS. HERBERT.
ALEX. MILNE.

To Sir Edward Belcher, C.B., Captain of Her Majesty's ship *Assistance*, at Greenhithe.

By command of their Lordships,
W. A. B. HAMILTON.

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Navigation of Behrings Straits.

The following document was communicated to the United States Senate by the Secretary of the Navy, in reply to a resolution of that body:

Navy Department, April 5, 1852.

Sir,—I have the honour to acknowledge the receipt of the Senate's resolution, adopted on the 22nd ult, calling upon the Secretary of the Navy to communicate to the Senate his opinion of the expediency of a reconnoissance of the routes of navigation in the northern seas and in the China and Japan seas, and whether any vessel belonging to the service can be used for that purpose; and also what would be the expense of such a reconnoissance? So far as regards the expediency of the reconnoissance referred to in the resolution, I find that the files of this department contain a carefully prepared discussion of the subject by the Superintendent of the National Observatory, of the date of December 3, 1851, confined, however, to the value and importance of the whale fishery in the Anadir, Ochotsk, and Arctic seas, as the whaling grounds in the regions about Behrings Straits are called, from which I beg leave to furnish the following extracts:

"In the summer of 1848, Captain Roys, of the whale ship *Superior*, penetrated the Arctic Ocean, through Behrings Straits, and encountered in his adventurous pursuits all the dangers of an unknown Polar sea. He was successful in his enterprise, filling his ship with oil in a few weeks. Influenced by the report which he brought back as to the abundance of whales, owners in the United States fitted out a large fleet for those grounds, and in 1849 Captain Roys was followed by 154 sail of whale ships, each vessel (said to be) worth on the average, with her outfit, 30,000 dollars, and manned by 30 able-bodied seamen each. This fleet took that season 206,850 barrels of whale oil, and 2,481,600 pounds of bone. In the summer of 1850 there went up a whaling fleet of 144 American vessels, manned as above, and of a like average value. This fleet, in the course of the few weeks left for their pursuits in those inhospitable regions, took 243,680 barrels of whale oil, and 3,654,000 pounds of bone. In the current year (1851) there went up a fleet of about 145 American vessels: but their returns have not been received; partial accounts of wreck and disaster only have reached us; they are startling. The lives and property at stake there for the two years for which we have complete returns may be thus stated:

	dols.	dols.
"1849—Number of American seamen	4,650	
Value of ships and outfits	4,650,000	
Value of oil taken.....	2,606,510	
Value of bone	814,112	
		8,070,622
"1850—Number of American seamen	4,320	
Value of ships and outfit.....	4,320,000	
Value of oil taken.....	3,761,201	
Value of bone	1,260,630	
		9,341,831
Total ships in two years	299	
Total seamen.....	8,970	
Value of ships and cargoes		17,412,453

"The losses during the year 1851 have been unprecedented, so far as heard from. No less than seven sail of this fine fleet of 1851, the Howqua, the New Bedford, the Arabella, the America, the Armata, the Mary Mitchell, and the Henry Thompson, have been wrecked there, and left behind as monu-

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ments of the dangers which meet these hardy mariners in their adventurous calling. There are reports of other losses and wrecks; these are certain: and though several of them were lost, not on shoals, but otherwise, yet these are enough to tell of imperfect hydrography, and to show the national importance of looking to it; for it may be so, that in case of loss in the ice, the knowledge of a sheltered anchorage near, and which a survey would give, would have prevented the exposure to the ice which induced the loss. All our commerce with what is called the East, is not so valuable as this was for 1849 and 1850. We see by the above statistics that in these two years more American seamen were engaged in that small district of ocean than are employed in our whole navy at one time; that in these two years these hardy mariners fished up from the bottom of the sea, and by their own energy created and added to the national wealth, the value of more than eight millions of dollars. And we moreover see that, owing to the dangers of the land and ice, the hidden rock and unknown shoals, one vessel in every twenty that went therein during the summer of 1851, has been left behind a total wreck, and that the lives of their crews, or of not less than one man for every twenty engaged in that business, have been put in jeopardy, mostly from the want of proper charts. No protection that our squadrons can at this moment give to our commerce, with any of the states of Christendom, can compare with that which a good chart of that part of the ocean would afford to this nursery of American seamen, and to this branch of national industry. I learn that in lat. 64° 15′ N., long. 178° W., Captain Middleton, of the barque *Tenedos*, of New London, discovered a shoal having only eight feet of water on it, and which was two acres in extent; that the ship Ajax, of Havre, was lost on a rock south of the Isle of St. Lawrance, ten miles from land; that the entire fleet of whalemen in the Arctic Ocean complain much that charts are wrong, that the coast is badly explored, but little known, &c.; that 'several of our vessels have been near being wrecked by unexpectedly making land or rocks under the bows at night;' that they have found in the Arctic Circle low sand-spits, extending five or six miles out; that also 'in Ochotsk Sea, there are hidden dangers;' that 'the *Howqua*, in 1851, was totally wrecked on a sunken rock in that sea.' I am also informed that the Indians are very friendly; that they wanted to trade; that the whalemen frequently went on shore, &c.; that 'Captain Taylor brought specimens of ores of metal from the Arctic shore;' that 'he obtained information from the natives of the existence of gold amongst them, as also iron;' that when shown implements of various kinds, they gave him to understand, 'plenty in the mountain.' Such was also the case with the gold. They knew the metal, and pointed as such existing among them.

"With these facts before the department I have no hesitation in expressing an opinion favourable to the measure suggested in the resolution, nor in recommending such a reconnoissance and survey as will establish accurately the positions of prominent capes, bays, headlands, and harbours. To fix the position of the rocks and shoals that endanger the navigation there, and to examine the Fox or Aleutian Islands, would be the work of two or three properly appointed vessels only for a short time. When the season is closed for these latitudes, the same vessels could be most beneficially employed in an examination of the seas of China and Japan, and the regions thereabout, whose hydrography is so defective, and an accurate knowledge of which is becoming every day of more and more importance.

"In reply to the latter clause of the resolution, viz.:—'Whether any vessels belonging to the service can be used for that purpose, and also what would be the expense of such a reconnoissance?' I respectfully state that this department has not at its command the vessels necessary for the contemplated service, unless by reducing the number of our vessels attached to squadrons on foreign service, which I by no means recommend. I am of opinion that

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the necessary vessels can be built at our navy yards, or purchased for a sum not exceeding 125,000 dollars; and that no additional appropriation beyond that sum need be made. The wear and tear of the vessels, the pay of the officers and crews, stores, provisions, instruments, &c., can be provided for out of current appropriations. The accompanying report from the chief of the Bureau of Ordnance and Hydrography, and papers prepared by Commander Ringgold and Lieutenants Maury and Page, are respectfully submitted, as throwing additional light upon the subject.

"I have the honour to be, very respectfully, your obedient servant,

"W. A. GRAHAM.

"Hon. W. R. King, President of the Senate."

BERMUDA.

My early impressions in relation to the Island of Bermuda, where I spent many happy days when youthful vigour made me more sensible of pleasurable scenes, are still vivid in my recollection. The beauty of its scenery has not changed, nor are its inhabitants less steady and judicious than in former days, but the medium through which those objects are viewed does not present them in such lively colours. I was in one of the first ships which entered within the reefs after the flag-ship of Admiral Murray had proved its practicability. Ships then did not proceed further than that anchorage, which obtained the appellation of "Murrays Anchorage," from the circumstance above mentioned. They now run in to Grassy Bay, fifteen miles further within the reef.

The forts which crown the hills were not then in existence. St. George's, the capital, was a quiet village where few troops were seen, and the harbour was a resort of small colonial vessels, to the reception of which it was limited previous to the deepening of the channel. This has been effected at a considerable expense by the Legislature of the island in the hope to induce the large steam packets to avail themselves of that port.

This island, ever since the discovery of the opening in the reefs (by Captain Hurd in his minute survey), has been deemed of much naval importance, and plans were formed by the highest military authorities for its defence. A naval arsenal also has been designed for the accommodation of a large establishment of ships of war.

Distant islands, however, cannot be defended on principles which would be the most judicious at home—by the erection of forts in all quarters that could be occupied by an enemy. It is obvious that under the circumstances of Bermuda, troops cannot be spared from the parent state permanently to garrison a multitude of forts, which on such a principle of defence would be requisite;—if they could, the expense would be enormous, and therefore I cannot dismiss this subject without an expression of my satisfaction at intelligence I lately received that such extravagant and unavailing system of forti-

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fication has been suspended. In my opinion it is a great error to imagine that naval officers are unfit to be consulted respecting maritime defences—had it not been for so mistaken a notion, many hundreds of thousands of pounds, perhaps I might say a million, might have been saved. I unhesitatingly assert that gun-boats not only would suffice, but are by far the most available, and infinitely the cheapest defensive force amongst the rocks around the island of Bermuda.

The coloured population of this island are a fine race, incomparably superior to the generality of the coloured population in the West Indies. They are accustomed to navigate in their commercial vessels —their lives are almost spent in boats, and no better crews could be got for the defence of their own island than they would prove themselves to be. In this there would also be other advantages—the permanent pay of troops—the cost of barracks—and above all, extensive stores, and reservoirs of *water* necessary for a large military force, would not be requisite.

The Naval Yard, if really planned by naval men, may indeed be adduced as a proof that I have fallen into error by imagining them capable of deciding on the best means of maritime defence. Nothing can be more inexpedient than all that has been done or is proposed to be done—blunders which, were I to set them forth, would seem incredible. The measures which have tardily been resolved on to stop the progress of an interminable series of fortifications, I hope may be followed by putting a stop to the extravagances perpetrated in the erections of this naval arsenal. It has proved a subject so vexatious to me that I shall not proceed in detail, but express my earnest hope that those who have the power will investigate the subject, and ascertain and pursue the course most useful to the naval service and least onerous to the country.

It is gratifying to turn from these military and naval incongruities to the state of the island, which is infinitely superior in all points of view to anything that is to be met with in the West Indies, or in the North American provinces. The Government of Bermuda has no debt—the legislature is economical in its disbursements, and has funds to appropriate to useful purposes, such as in deepening the channel into the harbour of St. George's, and in opening a channel into the Great Sound, a work which ought to have been undertaken at the public expense for the accommodation of the naval service, in preference to the formation of the Camber at the Naval Yard, which would have saved at least £150,000.

The Great Sound is one of the most magnificent basins of water that I have ever seen, and requires but the remains of a small barrier of rock to be removed, most of which (by the liberality of the Legislature) has already been thrown down at a cost of £1,500, in order to open a harbour far superior to any in the United Kingdom, and competent to vie with all the ports throughout the world, in security, capacity, and the conveniences essential to a place of naval equipment.

The civil government is conducted in a manner highly creditable to

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the Governor and to his Council, who seem to have but one view—the prosperity of the island, in which considerable success attends their endeavours, in so far as they possess the necessary power. Horticulture, for it cannot be termed Agriculture, is progressing rapidly, and the island is being converted into a hot-bed for the production of early vegetables to supply the markets of the northern parts of the United States. Orange trees are again being reared, and as formerly their fruit may become a staple commodity. Nothing can exceed the richness and fertility of the vegetable soil which has been washed from the upper grounds into the hollows, most of which have hitherto been unreclaimed, by reason of their having no natural outlet for the water, and being nearly at the level of the sea.

On the climate of Bermuda nothing need be said; its mildness during the winter months is universally known, as well as its comparatively healthful temperature as contrasted with that of the islands in the tropics. No period of the winter is so cold as to prevent the growth of all European vegetables, nor is it destructive of tropical plants. It is remarkable that the common potatoes grown here during the winter have never been affected with rot, though those produced in the summer have been subject to that disease; the sweet potato wholly escapes.

The only drawback to the certainty of an ample return for horticultural labour is the violence of periodical winds, which in a few hours blight everything that is exposed to their destructive action. From this calamity, however, hedges of reeds, a species of cane, form a good protection.

The water at Bermuda which is derived from wells is strongly impregnated with calcareous and decomposed vegetable matters, and is neither wholesome, nor fit for washing. There is no spring in the island, although water is found everywhere at the level of the sea. This arises from rain being retained in the porous stone as in a dam, much of which percolates from the swampy hollows before alluded to. The water in the navy wells is of this description, and never fails to produce bowel complaints, especially to those unaccustomed to it. There are, however, naval tanks, containing uncontaminated rain water, five miles farther from the anchorage, and new tanks are being constructed in the naval yard, but these latter are within range of the sea spray, and no doubt will be attended with diarrhœtic consequences—and with this further disadvantage, that the expense of construction in that locality will be very considerable; whereas good rain water might be collected at a fourth, nay, at a tenth part of the cost, in a convenient situation, where the spray of the sea can have no influence.

I may here venture to assert, that were a Commission (whether scientific or not) of persons of good understanding and unflinching character, sent on a tour throughout these Colonies, to investigate and report on all matters of interest, the good they would effect would far exceed in degree any expense that could attend that judicious measure, and might lead to the adoption of salutary reforms and im-

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mense pecuniary savings. It may be said we have a sufficient number of Blue Books on grievances and reforms, and abundant information on Colonial subjects (which are neither read nor attended to), but I am persuaded that if the report of such unflinching Commissioners were to be published in the humble form of a pamphlet, it would be generally perused, and be productive of more beneficial consequences, than the reports in quarto of all the Commissioners who have been appointed within my remembrance.

The existence of this solitary island so far from the continent of North America is a circumstance meriting the attention of geologists, as well as the uniform material of which it is composed. It is all of a calcareous nature, but differing in condition from any of the other islands of the same substance. The strata are exposed in the perpendicular cliffs on the sea-shore in numerous precipices, from a hundred feet to minor altitudes, and are composed either of the most minute shells or parts of shells so triturated that they scarcely indicate their origin. In some places, however, there are laminæ containing shells in a more perfect state, all of a white colour, with the exception of one, (which I found on digging a cave,) of a semicircular shape of a red colour, and almost as large as an oyster shell.

The whole of the substance of Bermuda can be burnt into good lime, but there is an indurated calcareous stone, often containing many perfect shells, on the island on which the naval yard is being built, which is preferred as more adhesive and better in quality.

Although there are no indications of volcanic products on this island, yet it exhibits manifest proofs that volcanic force has raised it from the depths of the ocean. In what stage of induration it was at that period, it is difficult to conjecture. The hills and vales throughout the whole extent of Bermuda have stratified calcareous material generally conforming on all sides to the inclination of the surface. There are, however, many situations in which the strata present themselves as manifestly broken by force. In the deep cutting in the road which enters into the enclosure around the Government House, one of these breaks appears at the apex of the hill dividing its sides, which here incline towards the centre, exposing a wedge-formed supplementary part that fills up the interstice. In the grounds of the Admiralty House, curious instances of unconformable strata are laid bare in old quarries. These indicate some other cause for their non-conformity than that before assigned; and I am quite at a loss to imagine how the stratified materials could have been placed one above another at such different angles by the action of water, or in any other way, without appearance of disruption.

There are caves upon this island containing large stalactites. There is one on Tuckers Island where these stalactites reach from the top of the cave far below the surface of the salt water it contains. I am not aware of any other instance where similar crystalizations have taken place under the sea water. It seems to lead to the belief that this island was at some time less submerged.

There are other caves much larger, and one which goes in so far

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that the officers who accompanied me did not scramble to its end. This cave is formed by two large masses of calcareous matter having been reared up one against the other. I have seen some very beautiful crystalizations taken from another cave recently found in a quarry at Ireland Island, but the absence of petrifactions here (for I have never seen one), constitutes a remarkable difference between this formation and that on the island of Antigua, where the roads are almost made with petrifactions.

In clearing the surface of the rock, as has lately been done at the quarries, and in laying the foundation of the new convict barracks, the most irregular formation is exposed. Large holes are found contiguous to each other in the white calcareous rock, which are filled with a substance resembling chocolate in its colour, unlike anything else upon the island.

On the whole there is little to remark on the strata of Bermuda; it might be curious, considering its surface as once the bottom of the sea, to put down a bore, and ascertain what is beneath; for I do not believe that the calcareous portion exposed to view is of any considerable thickness. The effect of air and water produces a hard crust on its surface to the thickness of an inch, which prevents the unremitting action of the waves from encroaching with greater rapidity on its shores.

On the northern side of Bermuda, and at the distance of about twelve miles there is a reef, raised by the industry of the numerous species of coral insects, in from six to ten fathoms water and to the extent of forty-five miles in length—exceeding in magnitude all the works of man for the protection of anchorages throughout the world. I have broken off some curious specimens of their work, but still more curious is the bottom in ten or twelve fathoms water, where forests of large submarine productions of innumerable kinds luxuriate like plants, exhibiting in appearance through the clear and pellucid water, varieties of form and colour such as are nowhere to be seen on the surface of the earth.

On the 26th January H.M.S. *Wellesley* left Bermuda, in tow of the *Scourge*, the wind being light, and adverse to passing the Narrows. Having gained an offing, the *Scourge* was ordered to perform the like service to an emigrant ship, which a short time before had entered the Port of St. George's, destitute of provisions, having been at sea upwards of seventy days, and doubtless all must have perished had adverse winds detained the vessel a few days longer. A subscription relieved their immediate wants, and also provided for their proceeding to New York. The case of this vessel affords further evidence of the necessity of better supervision of emigrant ships at home. For the service of towing (which probably saved a delay of several days on their voyage) these people showed their gratitude by cheering. It is a sad fate to be compelled to quit for ever friends and relatives, a cherished home and native land.

The *Scourge* being again sent a-head to tow the *Wellesley*, we averaged about six and a half knots, until at the expiration of forty-

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eight hours a breeze sprang up from the N.E., whereby the *Wellesley* was enabled to return a similar service to the *Scourge*, which, like most steam vessels, is inadequately rigged, and thereby deprived of more than half the power of performing useful service. This defect is, however, in some degree remedied, when a sailing vessel is in company, for the *Scourge* advanced the *Wellesley* 220 miles, and during the next three days we towed that steam vessel 360 miles; thus we alternately proceeded until our arrival at Carlisle Bay, Barbados, on Monday morning, the 5th February.—*From Notes, &c., by Admiral the Earl of Dundonald.*

SAILORS' HOMES.

In our number for last month we had the satisfaction of announcing the formation of an Institution for the establishment of Sailors' Homes, Destitute Sailors' Asylums, and Asylums for Aged Seamen, at each of the principal seaports in the United Kindom and the Colonies. It is now our pleasing duty, and one which we shall often we trust have to discharge, to chronicle the progress made by the Society during the past month, in the noble and national cause it advocates.

The preliminaries to be gone through in the mere first establishment of any institution, however limited its scope of action, entail no ordinary amount of labour. In such an institution, therefore, as the one before us, which is intended to embrace in its operations an entire class of our population, and over which scarcely two months have passed since the first step was taken towards its formation, we have but little right indeed to expect that it should as yet have got even into working order. With such an indefatigable Secretary and Director, however, as it possesses in the person of Captain Hall, the rapid progress already made, though surprising, was, to a certain degree, to be expected.

Having been favoured with an inspection of the books of the Institution, and made acquainted with the extensive nature of the correspondence opened between the office and our numerous outports, we cannot too highly compliment that business-like activity which, while it has performed so much, augurs so well for the future wellfare of the Establishment.

With respect to the correspondence above alluded to, the appeals made by the Society, we are happy to state, have been already responded to from many quarters in a most satisfactory manner.

In LONDON, Money Wigram, Esq., the eminent ship-builder, and no less eminent sailor's friend, has contributed to the funds of the Institute one hundred guineas towards the erection of a Sailor's Home at Poplar, accompanied with the assurance of still further pecuniary assistance in the event of this object being carried out. We sincerely hope this munificent gift will induce other influential persons connected with this locality to come forward in a like liberal spirit and assist in

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establishing here a Home, the necessity for which none acquainted with this neighbourhood can for a moment hesitate to admit.

In DOVER the Society, through the Rev. Mr. Yate, has circulated a proposal for the establishment of a Sailor's Home, Reading Room, and Sick Ward, for the fishermen of that port, and for shipwrecked persons who may be cast away on the adjacent coast. This proposal, backed up as it was by a substantial offer of assistance, in the shape of a donation from the Institute, was, to the lasting credit and honour of the ladies of Dover, immediately adopted by them, and a house taken, the first year's expenses being undertaken on their own sole responsibility.

Similar movements are being made in YARMOUTH and other places.

At FALMOUTH, where the greatest difficulties had originally to be contended with, owing to the confident predictions made by many that a Sailor's Home there would be a failure, one with the important feature of a sick ward attached to it has been lately opened. In a private report recently received, it is stated that in consequence of the number of sailors pouring into the port, after long and harassing voyages, many of them greatly debilitated by scurvy and other complaints, it has been found necessary to extend the accommodation of the Home from 28 to 40 sleeping berths.

In its truly praiseworthy exertions to extend the benefit of Sailor's Homes to all our principal seaports, the Institution is not forgetful of the interests of those Homes already established, having liberally subscribed £100 to the funds of the PORTSMOUTH Sailor's Home.

Such facts as those we have here briefly recorded, speak too eloquently for themselves to require a single comment from us, further than that the claims the objects of this noble Institution have of themselves upon the public, have been if possible strengthened by the earnestness in which they are urged, by the public good their promoters have already achieved, and by the stamp of ultimate success which the events of the past month have given to them.

Among the recent adhesions which the Society have received, we cannot omit mentioning the names of H.R.H. the Duke of Cambridge, the Rt. Rev. the Bishop of Oxford, &c.

THE BOTTLE CHART.

Resuming the subject of the Bottle Chart in our last number, we now annex the following Table, supplementary to that which will be found in it, containing a statement of all the bottle papers that have reached us up to the present time. For the facility of reference, they are arranged in the order of the longitude of their departure, commencing from the eastward.

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No. on chart.	Ships.	Signature.	Where left. When.	Lat. N.	Long. W.	Where found. Coast.	When.	Interval Yrs Days
				°	°			
2a	Prima Dona .	.....	.. 50	Cpe.	Cst.	Cornwall ..	May 51	.....
3b	Agnes Sophia.	Jenkin ..	8 June 48	47·9	7·6	Shoreham .	3 Aug 48	.. 56
3c	England	Farquhar .	11 Dec. 44	45·2	8·1	Isle of Man	16 Sept. 45	.. 279
5a	Corsair.....	Webster..	16 July 38	50·0	8·5	Ushant....	not said..	.....
6a	Zealous	Wade....	9 Dec. 44	49·0	9·5	Ireland ..	13 Jan. 45	.. 35
11a	Caroline	Kleine ..	26 Oct. 49	43·1	10·6	off Ferrol..	4 Dec. 49	.. 39
13a	Lily	Wilkins ..	23 Feb. 45	39·7	12·0	Dominica..	Mar. 46	.....
11b	Ann	Lewis ..	2 Jan. 48	52·2	12·0	Perlock ..	12 Mar. 48	.. 69
12a	Mohawk	Douglas ..	8 Mar. 47	49·0	12·5	Saltee Isle.	June 47	.....
13b	Pandora	Drury ..	10 Mar. 51	38·5	14·0	Lanzarote .	26 June 51	.. 106
19b	Crusader	Loobalastr	12 May 15	39·6	14·9	Madeira ..	10 Aug. 45	.....
20a	Bravo	Pain	27 July 45	46·2	15·0	France	7 Feb. 46	.. 247
18b	J. Bibby	.....	3 Feb. 50	37·0	15·1	Barbuda ..	21 Mar. 51	1 46
26a	Walpole	Winser ..	1 Nov. 46	48·9	17·8	France	not said..	.....
26a	Marmion	Freeman .	16 Aug. 50	49·1	18·8	Cornwall ..	29 Jan. 51	.. 166
43a	Windermere .	.....	20 Aug. 50	4·6	20·0	Lahou	6 Mar. 51	.. 208
37a	R. de Holland	Groeneld .	21 April 50	46·0	20·5	Brest	1 April 51	.. 345
32a	Jessy	Cook	8 Dec. 46	50·6	20·5	Glandore ..	24 Feb. 47	.. 59
37b	Illegible	Johnstone.	10 Aug. 47	47·3	21·7	Brest	4 Mar. 48	.. 206
44a	Rapid	Messum ..	24 Feb. 52	0·58	22·6	Martinique.	29 July 52	.. 155
45b	Windermere .	Ross	20 Sept. 51	5·68	22·4	Ciara	29 Nov. 51	.. 70
43b	Kinnear	Kelsall ..	8 May 43	8·8	24·3	Paraiba ..	2 Aug. 43	.. 86
43a	Kinnear	Kelsall ..	15 May 43	6·1	24·5	Africa	28 July 43	.. 74
40c	Superior	Salmon ..	2 Mar. 31	20·5	25·0	Crab Island	25 Nov. 31	.. 268
41a	Loharee	J. Raw ..	5 July 50	17·2	25·5	Mosquitia .	21 April 51	.. 290
40b	Erebus	Ross	22 Aug. 43	41·9	25·8	43·8 11·1	10 April 44	.. 231
47b	Delia	Adey	12 Aug. 42	50·0	26·0	Ireland ..	28 Dec. 42	.. 138
42a	Investigator .	M'Clure..	22 Feb. 50	12·4	26·1	Ambergris .	27 Aug. 50	.. 186
42b	Enterprise ..	Collinson .	3 Mar. 50	1·1	26·8	Honduras .	5 Mar. 51	1 2
51b	Britannia....	Mc Gregor	26 July 45	12·8	28·0	Brazil	4 Sept. 45	.. 40
51a	T. Brocklbank	Ponsonby .	16 April 48	7·0	28·1	Maranham .	12 Sept. 48	.. 150
48a	London	Ormson ..	not said..	31·4	28·5	St Michael.	26 April 50	.....
40a	Nisus	Rey	19 May 42	Cpe.	Vd.I	Martinique.	12 Feb. 43	.. 277
52a	Calliope	Kuper ..	28 Jan. 43	19·2	30·8	Caicos	Feb. 44	.....
52b	Harlequin ..	Cuninghm	June 51	24·7	30·4	Turks Isle .	17 April 51	.....
53a	Mary Allan ..	Boyd	not said..	50·9	32·2	Cornwall ..	29 Jan. 51	.....
53b	Normandie ..	Spalding .	14 Jan. 44	57·1	53·2	Norway ..	21 Oct. 44	.. 228
56b	Erebus	Ross	14 Aug. 43	37·8	34·5	Ireland ..	25 June 44	.. 314
56a	Windermere .	.....	3 June 45	46·0	35·1	France ..	Feb. 46	.....
56c	Isabella	Clarke ..	1 Dec. 48	32·8	35·1	Flores	28 Sept. 49	.. 302
56d	Andromache .	.....	15 May 38	47·2	34·8	Porto Rico.	18 Mar. 44	.....
68a	Sophia	Saxon ..	11 Feb. 48	5·2	40·3	Grenada ..	11 July 48	.. 151
70a	Thunder	H.W.M...	1 May 47	27·8	42·8	Florida ..	16 Feb. 50	2 292
71a	Banff	Lovie	2 Nov. 50	25·8	43·6	Long Island	20 June 51	.. 232
76a	Graham	Beach ..	13 Jun. 47	51·1	45·5	Barnstaple .	5 Mar. 48	.. 233
78a	Rhydiols	Riddell ..	10 May 45	47·5	46·5	France	Mar. 46	.....
92a	Taney	Walsh ..	10 Mar. 50	17·3	48·0	Elsuthra ..	6 Nov. 51	1 241
92b	Patna	Ponsonby.	8 Feb. 47	14·5	48·9	... .		.....
82a	Hibernia	Judkins ..	30 April 43	44·3	51·6	Newfndland	15 Aug. 43	.. 107
82b	Britannia....	Breckon ..	15 July 47	45·7	55·3	Newfndland	1 Sept. 47	.. 46
94a	Scorpion	Lawrance.	5 Nov. 50	21·7	60·3	Andros Isle	7 Feb. 51	.. 94
86a	Pr. Rupert ..	Herd	21 July 43	61·3	63·7	Feroe	25 May 44	.. 308
95a	Ruby	Allen	1 May 45	16·8	64·1	Caicos	23 June 45	.. 54
105a	Bache	Washngtn	31 July 46	37·6	69·0	Kerry	27 June 47	.. 331
106c	Pr. George ..	Potts	8 Aug. 27	29·5	71·0	Abaco	17 Oct. 43	.....
106b	W. Herdman.	Michael ..	21 Mar. 41	30·6	72·9	20·6 66·1.	28 Jan. 43	1 313

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No. on chart.	Ships.	Signature.	Where Left. When.	Lat. N.	Long W.	Where Found. Coast.	When.	Interval
				°	°			Yrs Days
107*b*	Dumbarton ..	Pendleton.	16 Feb. 48	18·1	74·7	Jamaica .	6 Mar. 48	.. 18
107*a*	Natches	Budd	6 Aug.	26·4	74·9	Long Island	21 Oct. 43	.....
	Investigator .	Bird	28 Aug. 48	73·7	78·1	Cpe Hooper	1 Oct. 48	.. 34
119*a*	S. Spynce ..	Leighton .	25 Apr. 50	25·1	86·5	Hunting I.	28 Jun. 50	.. 64
118*a*	Scorpion .. .	Lawrance .	25 June 50	21·8	86·7	Awanasas ..	9 Oct. 50	.. 106
119*c*	Electra.....	A.W.....	18 Mar. 48	28.7	88·7	Galveston .	27 July 48	.. 131

The experiment of throwing a bottle into the sea for the purpose of ascertaining where it will go, may at first sight appear trivial; the drift which it may take may be said to be entirely superficial, and it will therefore not obey the great currents of the ocean. This may to a certain extent be true, but it is a matter of interest where that drift takes it; and it then becomes a question how far beneath the surface it ceases, and the current begins. The casks of the *William Torr*, marked T 1 to 4, drifted, or were set by the current, from Davis Strait to the different localities where they appear on the chart; and we have had the case of wrecked timber ships drifting to the Canary Islands from the neighbourhood of the banks of Newfoundland. All agree with an Easterly set of the water in the Northern portion of the Atlantic, and a Westerly one in the Southward. There can be no doubt then that this tendency of the waters must to a certain extent affect ships making passages, and the experiment of the bottle may be fairly considered as an approximate view to the surface drift of the ocean. How far that drift extends below the surface, would form a most interesting subject for inquiry, and might be very easily made by the old method of our ancestors with the pitch kettle and the jolly boat in a calm. Assuming at a certain depth (say a hundred fathoms) the water is in a quiescent condition, the boat thus anchored remains stationary, and the ship is drifted away with a current the direction and velocity of which is thus determined. But the interest of the experiment would not be complete until it was found by reducing the depth to which the kettle descended, at what depth all drifted together. We should then have the depth at which the current commences.

To return to our bottles: we propose now proceeding with the contents of each severally; they will afford ample subject for remark, and we invite the opinions of our readers on the result of their own experiments whenever they may be inclined to give them. We appear to have a goodly array of these messengers, but perhaps not a hundredth part of those which have been sent upon their dangerous errand, not one of some of our friends having been found.

H.M.S. Favourite, Dec. 14th at Sea.
Paper No. 1. Lat. 49° 2′ N., long. 5° 48′ W.

I write this letter in order that I may find out the current: let me know if ever you receive it. It is a fine day for the time of year, but we have a foul wind. Edward Beauchamp Proctor.

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The following note was made by the person who forwarded the letter.—"This letter has been found at Berk, on the Coast of France, twenty-five miles south of Boulogne, this day, 4th of January, 1834." This accounts for so many vessels being lost on this coast. Since the 1st of September last five vessels have been wrecked in the space of about three miles.—*Nautical Magazine*, vol. 1834, p. 160.

The years 1842 and 1843, appear to be as disastrous as 1833 and 1834.—Ed.

(*No.*2.)

The following has been received at Lloyd's:—on the 23rd of November, 1841, a sealed bottle was picked up on the western coast of the Commune d'Ais Ile de Re, in which was found a letter in English, of which the following is a copy:—

"*On board the Lydie, of Liverpool, Capt. Petre, bound to Bahia, Oct.* 7, 1841.

"We have had during the last few days, in the Bay of Biscay, strong winds from W.N.W., and heavy seas.

"We apprehended that our voyage might be protracted on approaching the southern coasts of this bay, in which there is reason to fear meeting with strong currents. How desirable it would be, under such circumstances, to have a knowledge of the true set of the currents, in order to know how long one might follow them in standing to the southward with the helm a starboard. We are at this present time in lat. 46° 57′ N., and long. 7° by chronometer, meridian of Greenwich, having struggled against currents, which indicate either the approximation of the coast or the junction of the two currents.

"Whoever shall find this bottle is requested to make known to the public the place where, and the time when, it may have been picked up, so that it may come to the knowledge of the Scientific Society in England, and that it may be known we were in these latitudes."—*Times, Dec.* 23, 1841.

Lieutenant R. C. Moody, of the Royal Engineers, whose departure from Woolwich to assume the Lieutenant-Governorship of the Falkland Islands was noticed in October last, when off the Bill of Portland addressed a letter to his sister, Miss Moody, Guernsey, and having enclosed it in a bottle addressed in a similar manner, he threw it overboard. The bottle was picked up last week by one of the Coast Guard off Bletchington, and forwarded to Miss Moody, and its safe arrival was acknowledged by her father, Lieutenant-Colonel Moody. From the date it appeared the bottle had been 34 days at sea.—*Times, Dec.* 24, 1841.

(*No.* 3.)

A bottle from the ship *Graham Moore*, 6th of July, 1821, in latitude 47° 47′ N., longitude 7° 51′ W. Found 13th September, 1821, on the coast of St. Jean de Mont, arrondissement of Sables d'Olonne, department of La Vendée; and made known by the *Journal de Paris*.

(*No.* 3*a.*) *Londres, le* 21 *Juilles*, 1841.

Monsieur.—J'ai l'honneur de vous transmettre, conformement aux directions de M. l'Amiral Duperré, Ministre de la Marine en France, le billet ci joint, extrait d'une bouteille provenant du Vaisseau de Sa Majesté Britannique le "Benbow," et qui a été trouvée sur la cote de St. Gilles, dans l'arrondissement maritime de Rochefort.

J'ai l'honneur d'être, Monsieur,
Votre tres obt. servant,
Durant St. André.

To the Hon. Sidney Herbert, Secretary to the Treasury.

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Her Britannic Majesty's ship "*Benbow*,"
Lat. 46° 49′ 0″ } at Noon.
Long. 7 46 15 }
All well—bound for England.
"A. C.—*May* 2, 1842. "By Gunroom Officers."

(*No.* 4.)
On the 11th inst. a bottle was picked up at Porlease Bay, about two miles west of Padstow, containing the following written on paper with a pencil:—
"Ship *Britannia*, of New York, at sea, two days off Cape Clear, outward bound, Sept. 5, 1835. W. R."—*Plymouth & Devon Herald, Oct.* 25, 1835.

H.M. Brig Hope, Noon, Mar. 31, 1838.
(*No.* 5.) Lat. 50° 10′ N., long. 9° 43′ W., per chron.
"Sailed from Havana on the 28th of Feb., and have 1,172,642 dollars on board on freight, up to this time all well. The wind has been strong from the eastward for three days. Should this ever be taken up I request it may be made public, in some of the prints of England (*The Nautical Magazine*) The intention of this is to ascertain the direction and velocity of the current, &c.
"D. Pender, *Master*, R.N."

R. W. Yacht Club House.
(*No.* 5*a*.) *Mill Bay, Plymouth.*
Sir.—In the March number of the *Nautical Magazine*, (p. 181) you invite your readers to communicate any information they possess on the subject of Bottle Papers. As brevity is the order of the day, allow me shortly to state that, on the 16th of July, 1838, I threw *four* bottles overboard from the Plymouth schooner *Corsair*, (bound from Leghorn to Liverpool.) Our then lat. was 50° N., and long. 8° 30′ W. The *Morning Post* of October 22, 1838, reported on the authority of the French Consulate at Lloyds, *one* of the bottles found at Guignac Island, near Ushant. The paper enclosed therein was signed by Messrs. Webster, Cuming, Miller, and myself. The distance, in a straight line, drifted by this bottle was about 250 miles in 3 months, and the several facts of the case correspond tolerably well with those of the *Hope*, (Vide p. 182, No. 5, N. M.)
Your's, &c.,
Wm. Knight.

(*No.* 6.)
"H.M.S. *Arrow*, 14th of July, 1838, lat. 48° 30′ N., long. 9° 25′ W. The wind has been south-west for five days, occasionally blowing strong: the last few hours a fresh gale which has now drawn round to the north-west.
"B. J. Sullivan,
"*Lieut.-Commander.*"

(*No.* 6*a*.)
The following has been transmitted to the Admiralty by Captain Hornby, Comptroller-General.

Ballinskelligs, January 17*th*, 1845.
Sir.—I beg to acquaint you that a bottle was washed on shore on Tuesday, 14th January, 1845, with a memorandum as under-mentioned. The bottle drifted 158 miles in 36 days, the current setting it N.b.E.½E. nearly.
Robert Blake.

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"On board the *Zealous* of London, Dec. 9th, 1846. All well. Lat. 49° 2′ N., long. 9° 33′ W., thrown to try the current; the finders will be good enough to communicate the result.

"W. B. WADE."

(No. 7.)

GIBRALTAR, Feb. 9.—Copy of a paper found within a bottle, by a Moor, on the 8th of January, 1839, upon the sea beach, about half way between Arzyla and Laraiche:—

"*East India ship, Malabar,*
"*Outward bound, Aug.* 6, 1838.

"Whoever finds this will be so good as to put an announcement into the English newspapers to that effect. The passengers on board are all well. Our latitude to-day 43° 27′ and longitude 9° 3′. We saw land this morning and, from our chart it proves to be Cape Ortegal."

(True Copy) E. W. A. DRUMMOND HAY,
Tangier, Feb. 2, 1839. *British Consulate General.*

(No. 8.) *H.M. Schooner Pike, Falmouth, 20th Oct.*, 1834.

SIR,—Much having been said about the strength of currents on the coast of Portugal, I beg to submit the following statement, which occurred in May last, on my passage from Lisbon to Falmouth, in H.M. schooner *Pike*:—

May 8th.—Light breezes, Mount Tecla (a remarkable hill on the borders of Spain and Portugal), bearing N.E.b.E. ½ E. sixteen or seventeen miles, observed a dead whale floating; when we got close to it, the wind died away, and I was enabled to get it alongside, and succeeded in cutting out one of its lower jaw-bones. The breeze springing up, obliged me to cast it adrift before I could get the other. On my return to Lisbon, on the 7th of June, mentioning the case to Mr. Phillips, acting agent for the Consul at Belem, he informed me that a whale, answering the description, had been towed by the fishermen into the Tagus on the 6th of June. He agreed to accompany me next morning to ascertain the fact, and, from the marks, (my initials A. B., and a king's broad arrow, I cut on its head,) found it to be the same. On my giving the fishermen a small sum, they allowed me to take out the fellow bone to the one I had. From the time of my falling in with it to the time the fishermen saw it off Cape Espechel, was twenty-eight days. During that time it had drifted 220 miles, or about eight miles a day; the wind during that time from the northward and eastward, the distance off shore nearly the same as when we saw it. The last two years I have made nearly forty passages backward and forward from Falmouth to Lisbon, and, unless with a heavy swell and light winds, we have had little occasion to make allowance for currents, either on, or alongshore; with the wind dead on end, we have never taken more than three days and a half to beat from Lisbon to Oporto; and on the 22nd of July last I wayed from the Tagus at 5 P.M., and at midnight, 25th of July, hove to off Oporto, delivered a mail, and was anchored in the Tagus at 10 P.M., next day. We started from the Tagus, blowing a gale from north-east, and during that time the wind did not vary two points, close reefed sails, and the greatest part of the time with our topsail furled; had there been any current, it was impossible for any vessel, steamer, or others, to have done it in that time.

I am, Sir, your very humble servant,
ARTHUR BROOKING.

(No. 9.)

On the 25th of October, 1810, a gun-boat for the service of Cadiz, being in tow of the *Rebuff* gun-brig, broke adrift in a gale of wind, in latitude 39° 44′,

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and longitude 9° 38′ W. On the 19th of November following, H.M. sloop of war *Columbine*, when cruising 8 or 9 miles to the westward of Cadiz light-house, observed a gun-boat to leeward, which proved to be the identical boat that twenty-five days before had broken adrift from the *Rebuff*. The distance traversed by the boat was about 350 miles, or 14 miles a day, chiefly by the current, the wind in the mean time being so various as nearly to render the drift negative, or, if anything, against the set of the current.

(No. 10.)

A bottle from the *Carshalton Park*, Lieut. J. Steele Park, 27th July, 1827, in lat. 48° 39′, long. 10° 21′; taken up 21st. Dec., 1827, on the shore of Penbron Road, near the Loire, in the Bay of Biscay, lat. 47° 19′, long. 2° 30′ W.

"*Chanticleer*, 3rd of May, 1831.

"Obs.: Lat. 44° 38′ 30″ N., long. 11° 4′ W., chronometer. This cylinder was thrown overboard with a view of ascertaining the current. Moderate breezes from northward; fine weather. All well up to the present.

"H. T. Austin, Commander acting.

"Whover finds this paper is requested to forward it to the Secretary of the Admiralty, London, with a note of the time and place at which it was found."

(No. 11.) *Coruna, November* 19, 1831.

Sir,—The accompanying paper was transmitted to me from Vivero, a small port on the north coast of Galicia, by the courier who arrived from that place on the 16th inst. It appears to have been found on the shore, about four miles from the town, by a peasant, as far back as the 12th of last September, and to have remained in his possession until its object was discovered by the person who forwarded it to me. The direction to which the cylinder was carried indicates a south-easterly current off this coast.

I have the honour, &c.,

T. S. Sarell, Consul.

To the Secretary, Admiralty.

(To be continued.)

Prediction on Screw Propelling.

[The following is a remarkable prophecy of the great advantages of the screw propeller, all of which have been completely fulfilled.—Ed.]

2, *Wilton Crescent, London, October 23rd*, 1839.

Sir William.—In my trip on board the *Archimedes* I observed that the screw possessed the following advantages over the common paddle wheels:—

1st. By its immersion it is secure from the effects of shot.

2nd. Its action and power are not materially affected by the inclination of the vessel.

3rd. When the vessel is deep in the water the power is increased as the screw moves in a denser medium.

4th. It admits of guns being placed on the broadside.

5th. Its motion, from being under water, is silent, and well adapted to surprise an enemy during the night, and during the day it is difficult to distinguish the *Archimedes* from a sailing vessel

6th. It does not add to the breadth of the vessel, a circumstance of great importance, not only in navigating crowded rivers, but particularly in entering docks, basins, canals, &c.

7th. It does not agitate the water so as to injure banks of rivers, canals, or passing boats.

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8th. There is no risk in passing close to buoys, or floating bodies, during the night.

9th. Sail can be carried as in any other ship which must reduce the expenditure of coal, and increase the speed.

10th. The strain on the engines being steady and uniform, diminishes the wear and tear of both engine and vessel, and in all probability engines of a slighter construction will be found sufficiently strong, thus reducing, not only their weight and expense, but the space they occupy.

11th. Considerable more speed is to be obtained by the screw, as a propeller, than by the wheel or paddles, for that segment of all wheels or paddles, revolving out of the water, has to overcome the resistance of the atmosphere, and of course the greater their velocity, the greater this resistance becomes.

In thus stating the advantage of the screw, under circumstances which render the common paddle wheels lamentably deficient. I have now to draw your attention to what I consider one of the most important results of this excellent invention, namely, its effect on the steerage. The screw being placed immediately before the stern post, forces the water against the rudder with such velocity, that the slightest motion of the helm is sufficient to turn the vessel. This motion of the water against the rudder commences the moment the screw revolves, and causes the vessel to answer her helm, before she gets headway! In backing the engine a similar effect, in the opposite way, is produced on the rudder.

You can easily imagine how desirable this great power over the steerage of a vessel must be in crowded rivers, towing ships, and in frequently getting under weigh in a confined harbour, or on a "lee shore," for however slowly the vessel may be going, the screw will force the water against the rudder, with sufficient velocity, to make her answer her helm.

When I take into consideration the probability that ere long an engine will be adapted to give the screw any velocity required (such as Lord Dundonald's rotatory engine now in the course of trial at Portsmouth,) I have no hesitation in declaring it to be my firm conviction that the screw will supersede every other means hitherto adopted for propelling vessels, except in "very shoal water."

I have the honour to be,
Sir William,
Your most obedient and humble servant,
GEORGE EVANS.
Captain, R.N.

To Admiral Sir William Parker, K.C.B.,
Lord Commissioner of the Admiralty.

ANCIENT NAVAL RECORD.

Many of our readers will doubtless recollect those grim looking characters that used to hang on gibbets on the banks of the Thames, and which were removed by order of the late king (William the Fourth) when Lord High Admiral.

The following appears to have been the first instruction for hanging up these piratical scarecrows:—

Whitehall, 4 July, 1700.

MY LORDS,—His Majesty having received yesterday an account of the prisoners lately condemned for pyracy, In order to deter others from running into the like crimes, His Majesty thinks it would bee of use, that some of these Criminals after their Execution should bee hung up in chains in proper places on the Banks of the River, which His Majesty would have your Lordships consider of & if it is convenient to bee done that you give orders for it accordingly.

I am, my Lords,
Your Lordship's most humble servant,
JA. VERNON.

Lords Commissioners of the Admiralty.

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Sea Apprenticeship.

To the Editor of the Nautical Magazine.

London, Sept. 20th, 1852.

Sir,—On my arrival in England in the early part of last year, and before I left on the voyage from which I have just returned, I as usual supplied myself with all the back numbers of the *Nautical*, to which I have been a constant subscriber since 1835. I make these remarks in order to establish the claim as an old ship-master to reply to a letter signed W. M., which appeared in your June number for 1850, p. 341. The above letter would have been passed over with the contempt it merited, but for the Editorial note appended, which would appear to sanction, in some degree, the writer's uncourteous remarks.

W. M. says: "When a boy is bound apprentice to a tradesman on shore, that tradesman is bound to teach the boy the whole "Art and Mystery" of his trade. I would beg to inform W. M. that a boy bound apprentice to a ship-builder, for instance, is taught the use of the tools employed in building a ship, but he is *not* initiated into the "Art and Mystery" of draughting a ship. So with regard to other trades. A boy is bound apprentice to a sailmaker; he is taught to repair and to make sails; but his master is *not* obliged to teach him the "Art and Mystery" of cutting out sails. Should the boys aspire to become something above a working bee of the hive, their friends are generally prepared to assist them with the means of accomplishing their laudable wishes; but as all boys cannot become master shipwrights or master sailmakers, so is it impossible that every little ragamuffin that is sent to sea can become a master of a ship. W. M. says: "Are they (the shipmasters) in the habit of teaching the apprentices the 'Art and Mystery' of Lunars, Chronometers, Amplitudes, Azimuths, &c.? I think not; and in many, *very many* cases, for obvious reasons—the masters do not know it themselves." To the above scurrilous remark I would reply by asking W. M.—*Does* he *know anything about the above "Mystery" himself?* If he does, and is ambitious of his son becoming one of those he speaks of in so *courteous* a style, let him teach him himself. If he does *not*, and cannot pay a schoolmaster for his boy's education, it is far better that the boy should remain in that station of life "in which it has pleased Providence to place him."

It is something new indeed, Mr Editor, to be told that a British shipmaster should be turned into a sort of *Parish schoolmaster* to *cram* apprentices, as W. M. elegantly expresses it. I will only add, in conclusion, that several youngsters who served their apprenticeship with me are now masters of ships, and that it will always afford me much pleasure to assist in advancing a deserving boy. But on the other hand, had those boys' fathers come to me, and in the words of W. M. have said: "*I insist on your teaching my boy the 'Art and Mystery' of Navigation*," I protest, Mr. Editor, that although I would have done my duty by endeavouring to make *seamen* of them, I would not have taught them one particle of W. M.'s "*Art and Mystery*."

I am, Sir, your most obedient servant,

The Master of a British Merchant Ship.

Sourabaya.

37, Charing Cross, 29th Jan., 1852.

Sir,—As Hydrographer to the Admiralty, I address you with the view of bringing to your notice an error which at this moment exists in that inestimable work of the late Captain Horsburgh which must tend to mislead ships bound into Sourabaya, particularly from the eastward. In page 656, vol. 2, of that

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work, it is advised "that vessels drawing more than 15 or 16 feet water, should not attempt the southern passage into Sourabaya, where there are only 12 and 13 feet, muddy bottom, at low water, spring tides." Last June, *en route* from Hobart Town in the ship *London* of 720 tons, under my command, drawing 15ft. 2in., we entered and passed through the *new* southern channel, (the old one being nearly choked, and only fit for prows of small draft,) which is magnificently spacious, and capable of admitting vessels of 19 feet draft. The old northern channel from Sourabaya into the Java sea, through the Straits of Madura, recommended by Horsburgh to ships drawing *more* thon 15 feet, no longer exists, there being *more* water in the SOUTHERN *than* in the *Northern* channel—in fact, the case is just reversed. Ships of any heavy draft from Batavia or elsewhere, bound into Sourabaya, must pass to the eastward of Madura, and enter by the *New Southern* channel, there being only 15 feet at dead top of high water, spring tides, in the New Northern channel. Being anxious to push on to Madras and save time, I determined to try the merits of the *New* Northern channel, and happily succeeded in getting safely out to sea, without even grazing, having had a good commanding E.S.E. breeze; so that by dint of listing the ship over, nearly to our port sills, with guns and ballast, as also lowering our boats, we fortunately crossed the bar, on which there was only 14 feet, without once touching, the ship as before observed drawing 15ft. 2in. The bar is about three miles long, over a bottom of sand and mud, so that there is no danger to be apprehended from a ship grounding during the S.E. monsoon. The rise and fall on spring tides is from 6 to 7 feet. When clear of the bar in 5 fathoms, Points Pank and Klampis bore respectively W. ⅓ N., and E. ½ N., each distant about 6 miles. Should you consider the above statement worthy of notice, perhaps you will kindly oblige me by giving it publicity through the medium of the *Nautical Magazine*.

I am, Sir, your obedient servant,

J. SCEALES.

To Rear Admiral Sir Francis Beaufort, &c, &c.

RULES OF THE ROAD.

By the following we are glad to find that the Swedish Government has completely adopted the plan laid down by the Admiralty, and given in an early number of this volume, for preventing collisions at sea.

Stockholm, 21st October, 1852.

MY LORDS,—With reference to your Lordship's circular of 8th July, &c., I have now the honour to forward to your Lordship copies of a Royal Ordinance, containing the drawings promised by Baron Stjerneld, and showing that the Admiralty plan for preventing collisions at sea is completely adopted in Sweden.

I have, &c., G. LYONS.

Lord Malmesbury.

SEAMEN OF COLOUR IN AMERICAN PORTS.

[No. 279.]

AN ACT to amend an Act entitled "An Act more effectually to prevent free persons of colour from entering the State, and for other purposes," approved 16th of March, 1842.

Section I.—Be it enacted by the Senate and House of Representatives of the State of Louisiana, in General Assembly convened, That so much of the section

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first of said Act as refers to the Imprisonment of every free person of colour that may arrive in the state on board of any ship, vessel, or steamboat, in the capacity of cook, steward, or mariner, be so far amended as to allow such persons of colour, while in any part of the state, to remain on board such ship or vessel, upon the due execution of the bond and penalty prescribed by the second section of said Act.

Section 2.—Be it further enacted, &c., That it shall be the duty of the Master or Owner of every such steamboat or vessel, immediately upon his arrival at any port in this state, to report to the Mayor, Recorder, or other competent authority, the name, age, description, and capacity of every free person of colour employed on board his vessel, and obtain a passport from such authority to permit such person of colour to land, should it be necessary for his duties and employment as cook or steward, and it being within the discretion of the said Mayor, Recorder, or other competent municipal officer to grant or refuse said passport.

Section 3.—Be it further enacted, &c., That in case a free person of colour so arriving as aforesaid, shall be found on shore without such passport, and in contravention with the provisions of this Act, or of the said Act of the Sixteenth of March, Eighteen Hundred and Forty-two, he or she shall be imprisoned until the departure of such steamboat, ship, or vessel, and the Master and Owners become jointly and severally responsible in the sum of One thousand dollars for each free person of colour, according to the provisions of the second section of said Act of the Sixteenth of March, Eighteen Hundred and Forty-two; and all the provisions of said Act not specially hereby repealed, shall continue in full force and virtue.

(Signed) JOHN E. KING.
Speaker of the House of Representatives.
(Signed) J. B. PLANCHE.
Lieut.-Gov. and President of the Senate.

Approved, March 18th, 1852.

(Signed) JOSEPH WALKER.
Governor of the State of Louisiana.

Certified to be a true copy,

CHARLES GAYARRE, Secretary of State.

LAUNCH OF THE STEAM-SHIP FAITH.

On the 13th Nov., an iron screw steamer, to be called the Faith, was launched from the shipbuilding yard of Mr. John Laird, at Birkenhead. There was a large attendance of spectators on the occasion, who braved the cold rain that was falling with a determined spirit.

The vessel now launched is the second of the line of African mail steamers; the Forerunner being the vessel that preceded her; and the vessels to follow being the Hope, the Charity, and the Northern Light. The vessel launched on Saturday is 200 feet long, 30 feet beam, and her register is about 900 tons. She will be supplied with a pair of direct action engines by Messrs. Fawcett and Co., of this town, of the first class, and of ample power. The Faith is a well-modelled vessel, and is likely to sail fast. She has a half-length female figure head carved by Mr. Robertson of this town, and her stern which is elliptical is also decorated with carvings. The iron plating aft is carried up over the deck in the form of an arch, in which a wheel-house and other accommodation has been provided. The vessel is fitted up with deck-houses, and as she

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is intended for a warm climate the crew as well as the passengers will be accommodated upon deck. The hull of the vessel has been coated with Peacock's and with Macintosh's patent compositions for preserving iron ships, which will doubtless give an opportunity to test their respective merits.

The launch took place at about half-past twelve, and the vessel was christened by Mrs. Parsons, the lady of Capt. Parsons, her commander, and who, by the way, is a son of commander Parsons, late one of her Majesty's mail agents on the Cunard steamers. The launch was a beautiful one, and the vessel took the water without the slightest accident. She was brought up in the pool by dropping her anchor.

Close to the spot from which the Faith was launched, the Hope is in a forward state, and she will be launched shortly. She is a sister ship to the Faith in her dimensions, and she is to have a pair of engines, now manufacturing by Messrs. Forrester and Co., so that two of the leading engineers of this town will thus compete for the best engines, under equal conditions. And in this respect Mr. Laird has set an example to other shipbuilders, having given the order to Liverpool engineers whenever he had the disposal of it.

The launch of the Faith affords a convenient opportunity to enter into some consideration of the iron shipbuilding trade at Birkenhead, and its probable location on the banks of the Mersey at no distant period, to an extent which has never before been equalled or contemplated.

Confining attention to Mr. Laird for the present let us look at what he has accomplished already. With this builder it has been the business of a life to bring his shipbuilding operations to their present position, and now he is beginning to realise that success for which he has been so diligently working. We have taken some pains to make ourselves acquainted with his progress, and we have been enabled to gather some facts, which, we think, will interest the reader.

Since Mr. Laird commenced business the vessels he has built, with those he has in progress, number 98 ships, of 36,000 tons old measurement. Eighty of these vessels are steamers, and have been fitted with engines of a total power of 8,000 horses. The combined length of these vessels, if placed in a line, would be 12,000 feet or 4,000 yards. But reducing these figures to a more striking denomination, the length of the ships built by him would be 2¼ miles. Then these vessels must be of considerable value, and so they are. Estimating this at the current price per ton, the value of these vessels will be found to exceed a million sterling, which has been expended principally at Birkenhead and Liverpool.

Can we over-estimate the importance of these facts to this community? Very many of these vessels have been ordered for other ports, and, therefore, we have drawn from distant places the advantages of the expenditure of this money in our own town. The tradesmen of Liverpool will not require any argument to prove how deeply they are interested in Mr. Laird's welfare, and how extensive and mutual are the benefits of his undertaking.

But there is another and no less important consideration involved in this enterprise. The repeal of the navigation laws placed this country in a position of serious difficulty as to the building of wooden ships. It is true we had the workmen and the skill to construct wooden vessels; but in regard to the possession of the wood, and other important conditions, the foreigner had a decided advantage. What, then, were we to do? Our very existence as a maritime people depended upon the production and sailing of English ships. We were in a serious condition, and one which was obviously fraught with injury to our own people. We were placed in that circumstance that we could only make the best of a bad case, and we had to say whether we could not substitute iron for wood. In iron work we knew that we were unrivalled, and though we have suffered, and still suffer, from the repeal of the navigation laws, it must be our endeavour, by the substitution of iron in the place of wood, to bring shipbuilding back again to our shores.

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Let us look, however, at what Mr. Laird is now doing in his yards at Liverpool and Birkenhead. A visit to the Birkenhead yard will show a scene of the most gratifying industry. The vessels on the stocks there are "The Hope," of 900 tons, which is nearly ready for launching for the African Mail Company, and two vessels of 1,300 tons new measurement each, for the South American Steam Company, and the keel and the other work is preparing for a steam vessel of 1,850 tons register, and 450 horse-power, for the Peninsular and Oriental Steam Company, and which is expected from her fine model and power to attain a speed of at least twelve knots per hour. The keel of this vessel is an extraordinary piece of iron work, being in lengths of 50 feet, 10½ inches deep, and 5 inches thick, and in this manner the builder has shown his desire to keep the trade in this town, by having this keel made by the Mersey Steel and Iron Company. Then, again, in the Liverpool yard, we find that Mr. Laird is getting into full operations, having laid down three vessels, "The Charity" and "Northern Light," of 1,100 tons each (screws) for the African Mail Company, and a paddle-wheel vessel of 400 tons register, for the South American Steam Company, intended for a branch packet on the coast of Brazil. This vessel will somewhat resemble "The Countess of Ellesmere," recently built by Mr. Laird for the Runcorn station, and which is the fastest vessel at present on the Mersey. But the vessel now to be built will be somewhat larger, and more powerful, than the Countess of Ellesmere, and there can be no doubt that she will excel the Countess in speed.

Through the introduction of iron vessels, there has been an increase in shipbuilding in this port of late, and it is of the highest consequence that the trade should be fostered to the utmost extent. Within the limits of the borough of Liverpool there is little space for the ship-builder; but look at Birkenhead. The authorities of the Birkenhead township and docks should make it their especial business to encourage this branch of trade, as it is one in the success of which they have a vital interest; and we cannot but feel that if they had completed their docks, and offered proper facilities for trade, instead of squabbling about matters of detail, they would long ago have had an important shipbuilding and manufacturing trade established on the banks of Wallasey Pool. Let any one look to the contrast between the contemplated expenditure of £150,000 or £200,000 on dock or other works in this port, with the constant outlay of such a concern as Mr. Laird's, who already employs from 500 to 600 men, and who is thus continuously distributing capital in the very best form namely, that of labour. But this must be put a little stronger. Report says that Mr. Mare, the celebrated shipbuilder at Blackwall, pays £3,500 per week in wages, which is equivalent to the employment of 2,500 workmen, representing, with their families, a population of 15,000 people dependent on his works. The population of Birkenhead at present is from 25,000 to 30,000 persons, and what a change would be effected, and what a benefit to our interests, if a population of 15,000 industrious souls were added to Birkenhead? and there is no reason why this should not be the case, if proper inducements were held out, and that at a very early period. From the Clyde, too, we should draw a considerable influx of trade. A large portion of the vessels built there sail from this port, and are repaired here; so that the tendency of workmen is from Glasgow to Liverpool instead of from Liverpool to Glasgow, as it was formerly. Now, what is to prevent the vessel being built in the port from which she sails? Nothing but want of facilities for building. The argument then is this. That Mr. Laird should be in Liverpool what Mr. Mare is in London. Mr. Mare is a shipbuilder, but not an engineer; so that we may very fairly suppose that for the construction of the engines, &c., for his vessels, as much money will be paid for engines as for the hulls of the vessels; and that as many people will be employed in that branch of manufacture. Generate such a trade here and see the results. Fifteen thousand persons would be added to the population of

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Birkenhead, and 15,000 to the population of Liverpool, amongst whom £7,000 would be paid in weekly wages, amounting to £185,000 on each side of the Mersey, or £370,000 annually added to the wages of the operatives of this port.

Enough has been said to show that such are both desirable and practicable, and so weighty is the subject that the reader will only require to have it laid before him to contemplate how in his own sphere he can assist so desirable a consummation. Mr. Jesse Hartley is reported to have said that Wallasey Pool should have been made the great workshop of the Port of Liverpool, and had such views been adopted some years ago, there can be no doubt that Birkenhead and Wallasey would now have been thriving and populous localities.—*Liverpool Standard.*

Magnetic Variation.

Mean monthly values of magnetic western declination and dip, at the Royal Observatory, Greenwich, for the year 1844.

	Variation, W.			Dip.	
January	23°	19′	22″	68°	59·5′
February	23	18	43	68	59·7
March	23	18	42	68	59·8
April.....	23	18	42	68	59·8
May	23	19	23	69	0·9
June.....	23	19	8	69	1·3
July	23	18	40	69	1·5
August.....	23	13	25	69	4·3
September	23	13	6	68	59·2
October	23	12	52	69	0·6
November	23	11	50	68	56·6
December.....	22	59	41	68	57·2

1852, Nov. 20.

G. B. Airy.
Astronomer Royal.

Major-General Colby and the Survey of Ireland.

[The subject of the following memoir being intimately connected with the hydrographic surveys of our coasts, which are dependent on Ordnance data, is sufficient authority for introducing it into these pages, independent of reasons of any other kind.]

A few weeks ago we recorded the death, in this neighbourhood, of Major-General Colby, R.E., F.R.S., &c. The *Woolwich Journal* for the present month contains an interesting notice of the deceased officer from the pen apparently of Lieut.-Col. Portlock, R.E. It dwells chiefly upon his character as a man of science, and gives, in the following account of his operations in connexion with the survey of Ireland, a highly honourable, and we believe by no means exaggerated, estimate of his acquirements and services in his civil capacity:

At the age of little more than seventeen he joined from the cadet company, and became a second lieutenant of the Royal Engineers in December, 1801. He was early associated with Lieut-Col. Mudge, R.A., (afterwards General

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Mudge, and lieutenant-governor of the Royal Military Academy,) in the British survey, that officer having become acquainted with his mathematical acquirements and tastes. At that time the survey was considered a separate department, and not being necessarily connected either with the Artillery or Engineers, was independent of the authorities of both. On this principle Major Colby acted at the commencement of the Irish survey, by nominating for it several Artillery officers, namely, Lieut. Mallock, Lieut. Rodgers, and Lieut. Robe, (now Lieut-Col. Robe,) and though such an arrangement became impracticable when the number of officers became very great, and three companies of Royal Sappers and Miners were trained for and attached to the survey, some allowance should be made for the feelings of General Colby, when he found that a work which he had commenced and successfully carried forward on his own individual responsibility, and a department in which he had hitherto considered himself as solely responsible to the Master-General, were henceforth to be conducted by him under the immediate control of the Inspector-General of Fortifications. The title-page of the three published volumes of the "Trigonometrical Survey of England and Wales," will explain fully the old system above referred to. The first, dated 1799, embraces the operations commenced in 1784, and terminating in 1796, and is thus expressed. "First published in, and now revised from, the Philosophical Transactions, by Captain William Mudge, F.R.S., and Mr. Isaac Dalby." The second, dated 1801, takes up the operations extending from 1797 to 1799, and is described as "by Captain William Mudge, of the Royal Artillery, F.R.S." The third, published in 1811, contains "an account of the Trigonometrical Survey, extending over the years 1800 to 1809, by Lieutenant-Colonel William Mudge, of the Royal Artillery, F.R.S., and Captain Thomas Colby of the Royal Engineers." In 1821, Major Colby obtained his brevet rank; and in 1824 commenced the great work of his life, the Ordnance Survey of Ireland. In that year a committee of the House of Commons reported on the necessity of a General Survey of Ireland, and recommended that it should be undertaken by the Ordnance. The Duke of Wellington was Master-General, and having assumed the responsibility of such a task, he confided its execution to Major Colby, who had then for some years conducted the Survey of Great Britain. The survey required for Ireland was very different in its nature and objects to that of Great Britain; it was expected to be laid down and published on a scale of six inches to a mile, and was designed to form the basis of a land valuation, and of a revised system of local taxation. For a work of such minute detail and such close precision as these objects rendered necessary, Major Colby was obliged to create the means of execution, and to devise a plan of operations which should enable him to employ numbers as well as skill. Taking for his model the celebrated "Down" Survey of Sir William Petty, (subsequently so well described by Major Larcom, R.E.,) and applying the whole energies of his mind to the subject, he devised that beautiful system of disciplined and co-operative labour which enabled him to apply to the work all the resources of science, and yet to employ upon it both private soldiers and peasants.

The Royal Sappers and Miners supplied the highly-trained soldiers who formed a nucleus for the work, and the quick and intelligent peasantry of Ireland produced numbers of candidates sufficiently instructed to serve as materials for its perfect construction. To those who, like the present writer, saw the work in its infancy, when every thing had to be created, (when, for example, in one branch of it, under his own superintendence, he had to begin by training one solitary civilian observer,) and remained to witness it as a vast and beautiful machine, combining into harmonious action the labours of about forty observers and many hundreds of surveyors and draughtsmen, and pro-

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ducing annually a perfected survey of several millions of acres, the success of General Colby must appear most complete and most wonderful.

To secure the undisturbed and uniform movement of so complicated a machine, it was necessary to form an equally perfect office establishment, and this was done in the Survey Office at Mountjoy, in the Phœnix-park, Dublin, the arrangements of which (including those of the Engraving Establishment) were carried by Colonel Colby to the utmost perfection, under the personal superintendence of Captain (now Major) Larcom; and the final excellence of that establishment may be studied in that of the Map Office, at Southampton, which is, in fact, no more than its reflected image.

Having thus grasped in his mind the requirements of the survey in its mere practical character, Major Colby felt, as a man of science, that so great a national work ought not to fall short of the excellence of continental works in any of its operations, and that some scientific advance should be made in the mode of measuring its first base line. With the beautiful differential rods of the French philosophers he was not perfectly satisfied, nor would he adopt the mode, proposed by the late Captain Drummond, of measuring with broad bands, or ribands formed of mica; but feeling a preference to the principle of compensation, he gave it a new application, by inventing those admirable compensation bars, which stamped on the Irish Survey a character of novelty, and inseparably connected the name of their author with the history of geodetic science. It is not to be supposed that so great a work could have been carried on successfully without the co-operation of many most able and zealous officers; but when it is considered that their efforts were all directed and regulated on the system planned by General Colby, it must be felt that the Irish Survey, in its beginning and in its end, was eminently his own work. Were this narrative now to end, it would still fail to do full justice to the comprehensive mind of General Colby. When asked by Sir Henry Hardinge, then Clerk of the Ordnance, to state the advantages of a survey, he did not content himself by describing its ordinary usefulness, but nobly represented it as the proper basis for geological, statistical, and antiquarian surveys. These views were acted upon at the commencement of the survey, and to General Colby must therefore be ascribed the merit of having first originated a national geological survey, and connected with it a museum of economic geology. He did indeed more, as his scheme comprised natural history and antiquities, and the museum at Mountjoy contained not only a most valuable collection of minerals and fossils, but also an equally important one of the plants and animals of Ireland.

It is true that subsequently General Colby shrank from that responsibility which at first had seemed so light to him; that the Ordnance abandoned these collateral works; and that the geological survey passed into the hands of the Woods and Forests, there to acquire a full development, under the able guidance of that prince of geologists, Sir Henry de la Beche; but let us recognise in the Memoir of Londonderry, published in 1835, in the Report of the Geology of Londonderry and Tyrone, published in 1843, and in the Statistical Papers of the Census Commission, drawn up by Major Larcom, and founded on the Statistical Section of the Memoir of Londonderry, to which that officer had so largely contributed, proofs that the scheme proposed by General Colby in 1824 would, if it had been followed up, have led to the publication of a national work, which, both in the grandeur of its conception and the importance of its results, would have been unrivalled by any such national work in Europe. No one can now regret that the geological survey should have been placed in the hands of Sir Henry de la Beche, Professors Phillips, Forbes, Ramsay, Lyon, Playfair, Percy, Jukes, Hooker, and other most able men; but at the same time let us do justice to him who first officially suggested so noble an undertaking.—*Liverpool Paper.*

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Nautical Notices.

Port of Liverpool.—C 1 Red Can will be altered to C 2 Red, and moved 200 fathoms E.S.E. into 32 feet at low water.—Formby Lightship bearing N.N.W. ½ W. 1¼ miles; Crosby Lightship S.E. ½ E. nearly a mile.

A Red Can Buoy, marked C 1, will be placed off the S.E. Spit of the West Middle in 18 feet at low water.—Formby Lightship bearing N.bW. ½ W. ½ of a mile; C 2 Red Can S.E. ½ S. ½ of a mile

V 4 Red Can will be moved 430 fathoms N.N.W. ½ W. into 20 feet at low water.—Formby Lightship bearing N.E.bN. 130 fathoms; C 1 Red Can S.E.bS. ½ S. ½ of a mile.

V 3 Red Can, with Perch, will be moved 150 fathoms N.W.bW. into 12 feet at low water.—Formby Lightship bearing E. ½ S. 400 fathoms; V 4 Red Can S.E.bE. ½ E. ½ of a mile.

V 3 Black Nun will be moved 300 fathoms W. ½ S. into 14 feet at low water.—Formby Lightship bearing E.S.E. ½ E. ½ of a mile; V 3 Red Can, with Perch, S.E.bE. ½ E. ½ of a mile.

V 2 Black Nun will be moved 100 fathoms W.bN. into 12 feet at low water.—Formby Lightship bearing E.bS. ½ S. 1½ of a mile; V 2 Red Can S.bE. ½ E. 300 fathoms.

V 1 Black Nun will be moved 120 fathoms N.W. ½ W. into 12 feet at low water.—V 2 Blak Nun bearing S.E.bE. ½ E. ½ of a mile; V 1 Red Can S. ½ E. ½ of a mile.

N 1 Black Nun will be removed and discontinued.

HFpy White and Black Nun, striped vertically, will be moved 200 fathoms N.E. ½ E. into 14 feet at low water, and the lettering altered to Zpy, in consequence of the name having been altered to Zebra Channel.—Formby Lightship bearing S.S.E. ½ E. nearly two miles; Z 1 White and Black Nun, striped vertically, S.E. 1 mile.

HF 1 White and Black Nun, striped horizontally, will be moved 170 fathoms N. ½ E. into 7 feet at low water, and the lettering altered to Z 1.—Formby Lightship bearing S.E.bS., a little southerly, 1 mile; Zpy White and Black Nun, striped vertically, N.N.W. ½ W. ½ of a mile.

The lettering of HF 1 White and Black Nun, striped vertically, will be altered to Z 1.

K 1 Black Nun will be moved 320 fathoms S.E. into 16 feet at low water.—N.W. Lightship bearing W. ½ N. 2½ miles; Bell Beacon N.bE. 2½ miles.

R 2 Red Can will be moved 100 fathoms N.bW. ½ W. into 8 feet at low water.—Leasowe Lighthouse bearing S. ½ W. ½ of a mile; Leasowe Castle S.E. ½ S. 1 mile.

The Numbers of C 3 and 4 Red Can will be altered to 4 and 5.

Sardinia.—Fixed Light at Port Torres, Gulf of Asinara.—The Sardinian Government has given notice that on the 1st of last month a Fixed Light was established on the extremity of the Eastern mole of Port Torres in the Gulf of Asinara.

The Lighthouse stands in latitude 40° 50′ 13″ N. and longitude 8° 24′ 25″ E. of Greenwich; and the light being 49 feet above the sea level is visible at the distance of 12 miles.

South Australia.—Revolving Light on the East End of Kangaroo Island.—Mariners are hereby informed, that on the 10th of last January, a Revolving Light was established on Cape Willoughby, the eastern extremity of Kangaroo Island, in 35° 49′ 20 South, and 138° 12′ 30″ East of Greenwich.

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The Light appears at intervals of a minute and a half, and being elevated 241 feet above the level of the sea, may be seen at the distance of 24 miles, from the deck of a moderate sized vessel, and on all bearings, from N.E.bE. ½ E. round to S.bE. ½ E.

South America.—Revolving Light at Monte Video.—Her Majesty's Government has received official information, that the new lighthouse on the summit of Monte Video was completed and lighted on the 16th of July last; that the light is on the revolving principle, and is visible for an interval of thirty seconds once in every three minutes, and that it is 486 feet above the level of the sea, and is therefore visible from a distance of about ten leagues.

Floating Light in the Læsoe Channel, (Kattegat.)—Her Majesty's Government has been officially informed, that it is the intention of the Danish Government to place a light vessel in the course of this month. in the Læsoe Channel of the Kattegat.

The vessel is to be painted red with a white cross, carrying two masts, schooner rigged, and will be moored in ten fathoms water in a direction E.bS. (true) three cables' length from the middle buoy (with two brooms on it) on the eastern edge of the Dvale Ground. The light will be fixed and appear at an elevation of 30 feet above the level of the sea, being visible in all directions from it at the distance of about 3 leagues.

The position of the vessel will be lat. 57° 12¼ North, long. 10° 41¼′ East from Greenwich.

Notice to Mariners.—Information has been received at the Department of State (Washington), from B. Everett Smith, Esq., U. S. Consul at Grand Turk (Turk's Island), of the erection at that place of a new lighthouse, to be completed and in operation by the 1st of October next.—*Shipping and Mercantile Gazette, Sept.* 8, 1852.

The Horsburgh Light.

[We have already recorded the establishment of this Light, but not having before seen so complete an account of it as in the following paper, we are induced to preserve this also.—Ed.]

The Lighthouse was designed in 1848, and the plans sent home for submission to the Court of Directors. It was after careful consideration of the effects of the waves during the North East monsoon that I advised the Government that it should be entirely constructed of granite externally. I found that brick pillars wasted rapidly under the effects of the spray. The estimate for the building amounted to 15,928.04 dollars Spanish, and the lantern machinery and apparatus to £1,500 sterling; the work was sanctioned under the impression of the honourable court that it would cost double the amount. Orders came out in December, 1849, to commence operations, but these were necessarily delayed until the monsoon changed in March. A party landed on the 31st of the month, but were got off again with great difficulty, as the monsoon came down again, and drove the gunboat in attendance to Pt. Romania. A permanent landing was not effected till the 11th of April, when I landed with 46 men and commenced operations. The works were put a stop to on the 21st October, by a heavy swell coming in from North East, and we did not land again till April following, for the purpose of building. I came close to the rock several times during the North East monsoon, but was never able to land till the beginning of March.

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Pedra Branca is a rock 150 feet long, and 100 broad, at high water spring tides; rugged in aspect, and intersected by fissures. The highest point is 24 feet above high water spring tides, and the Lighthouse is built on the only stable rock that belongs to the group; all the rest are mere boulders, being intersected by fissures underneath. The rock on which the Lighthouse stands could only afford room for a house of 22 feet in diameter; the base at the level of the first entire course is consequently confined to that dimension. The walls at the first entire course are 7 feet thick, and at the 59th course 2½; the interior of the walls are bricks, being faced with square granite in one foot courses, alternating 12 and 14 inches in breadth, every third stone being a header reaching through entire thickness of the wall. The house contains rooms 11 feet diameter for the light-keepers, 3 in number, 1 visitors' room, 1 store room for provisions, 1 store room for light room articles, and 1 vault for water; each room is vaulted with bricks set in cement. Rings of iron two inches square are set in the walls at the level of each vault. The light-room on the top of the building is entirely constructed of granite. The doors and windows are of marbow; all exposed metals are either of brass or copper.

The light is 95 feet above high water spring tides. It is produced by a combination of reflectors and refractors, the invention of Mr. Thomas Stevenson, of Edinburgh. There are 3 planes of reflectors, and 3 in each group; each group attain their brightest state once every minute, and are seen as a star of the first magnitude, when they sink under the horizon, as seen from a ship's deck at the distance of 15 nautical miles. From the mast-head the light might be seen 22 miles The glass frames are triangular, by which great lightness is gained, and are of cast iron; the dome is of copper; the machinery is contained in a cast iron case, and the wheel work is of gun metal.

Though the light only proceeds from 3 reflectors, yet by the new combination of refractors, they are equal to the power of 5 of the common kind. The lantern, apparatus, and lightning conductor were designed by Mr. Alan Stevenson, the engineer to the northern Lighthouse board, well known as the engineer of the Skerryvore Lighthouse, situated on the west coast of Scotland, in a position of more difficult access than either the Eddystone or Bell Rock.

The Horsburgh Lighthouse is 10 English miles from the nearest point of land, which is Pt. Romania, and 40 English miles from Singapore, where provisions alone can be procured, a barren coast intervening. The stone work was completed in June, 1851, and the light ready to show on the 20th September, 22 days after the lantern and apparatus was landed on the rock. Thus the work from commencing till finishing took only 18 months.

There were 40, 50, and even 60 men employed at the rock during the working season, most of whom were Chinese. The other natives were Malays, Klings, and Bengalese, and one or two Javanese, Boyans, &c., and natives of other parts of the archipelago. As there were three classes of Chinese, viz., Canton, Aya, and Kay, there was no less than eleven languages spoken; most could speak no Malay, so that they had to be directed by signs. It is not surprising that we found great difficulty at first in inducing men to engage to come; when brought out to the rock, they used to rush to the boats, and cling to the seats till driven back by main force. One of the two gunboats mutinied, and the commander and whole crew refused to remain, principally owing to the risks which they said they ran. This was at a time we were dependent on them for water, and then had only three days supply, when there were 40 men on the rock. They were of course all discharged, and the gunboats' crews have behaved exceedingly well ever since.

The cost will be within 1,000 dollars Spanish of the original estimates. The accounts are not yet made up, but the cost of the building stands nearly 16,500 dollars Spanish, and the lantern apparatus, &c., £1,370 sterling; additions to the original designs were sanctioned to the amount of about 1,000

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dollars Spanish. I believe this will he satisfactory to the Government, as a much higher outlay was anticipated.

J. T. THOMSON, Government Surveyor.

Singapore, 30th September, 1851.

PHAROS EGO.
Cui nomen præbuit
Horsburgh Hydrographus
In maribus Indo-Sinicis præter omnes præclarus
Angliæ Mercatorum nisa imprimis indole
Ex imperii opibus Anglo indici denique constructa
Saluti nautarum insignis viri memoriæ
Consulo.

A.D. MDCCCLI.
W. J. BUTTERWORTH, C.B.
Prov. Malacc. Præt.
J. T. THOMSON, Architect.

A.D. MDCCCLI.
The Horsburgh Lighthouse
Is raised by the enterprise of British merchants
And by the liberal aid of the East India Company
To lessen the dangers of Navigation
And likewise to hand down
So long as it shall last
In the scene of his useful labours
The memory of the great Hydrographer
whose name it bears.

COLONEL W. J. BUTTERWORTH, C.B.
Gov. in the Straits of Malacca.

Hong Kong Register, Nov. 25.

WALTER ISLAND AND ROCKS IN THE PACIFIC.—Captain Drescher, of the Hamburg barque ***Walter***, from China, at San Francisco, gives the following particulars of the discovery of a new island and rocks in the Pacific. On the the 18th August, 1852, at noon, by observation, was lat. 32° 9′, long. 139° 18′ East of Greenwich, saw an island N.E.bE.; we steered East 26′ until 5 P.M., whence we took the position of the island, about 20 miles distant, which was lat. 32° 39′, long. 139° 49′ East of Greenwich. 5.30 P.M. saw from masthead, S.E.bS., several rocks, lying close together, rising 10 to 15 feet from the water; they were scarcely four miles distant from us, and a heavy surf was rolling over them. Neither island or rocks are marked on the newest charts in their above positions.—*Shipping and Mercantile Gazette, Nov. 23rd*, 1852.

[They appear to be among the Japan Islands in the Pacific, of which we as yet know very little.—ED *N. M.*]

STEAM NAVIGATION BETWEEN BAHIA, MACEIO, AND CARAVELLAS.—An exclusive twenty years' privilege has been granted by the Brazilian government to Senhor Pedrona de Albuquerque, a wealthy proprietor of Bahia, for establishing steam navigation between that city and Maceio, by a northern line, and Caravellas by a southern line of steam-packets. A privilege for thirty years has also been conceded to Senhor Irenen Evagalista de Soura for the navigation of the river Amazon by steamers. In one day the 3,000 shares of this company, representing a capital of 1,200 contos, were subscribed for.

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New Books.

An Outline of Shipbuilding. *By John Fincham, Esquire, late Master-Shipwright of H.M. Dockyard, Portsmouth.* London: Whittaker and Co.

That "ships must be studied with the same care and assiduity as books," is a truism which might be made the subject of a longer discussion than our space would admit in the announcement of a third edition of this valuable work. The author fully appreciating, and, enlarging on the necessity for the study, pointedly alludes to the reasons why our shipbuilders, with all the advantages of theoretical knowledge, have hitherto had to work in the dark, and laments, that as regards the practical results of the trials of our men of war that have taken place from time to time, since the peace, they may be said to have reaped no benefit whatever. "The labours of the scientific, and those of the practical man (he well observes) are alike necessary to improvement," and "theory may be erroneous, but perhaps few theories have ever been formed by scientific men without some advantage. In general those theories which have altogether failed of being useful have been the result of speculation pursued by persons of slender acquaintance with the subject," and, he continues, scarcely anything has of late years, more retarded improvement in Naval Architecture than the erroneous views which have been entertained as to the extent of knowledge necessary to success in carrying on its general operation," for, "too often it has been assumed, that with a tolerably correct notion of one or two general conditions, a person may become a constructor: whilst merely vague opinion must be substituted for a knowledge of all other parts of the subject. Thus a speculative constructor deems himself in the right path, when he has determined upon this or that particular form,—that a ship must have a sharp bow, or a clean run, or perhaps 'a cod's head, and a mackerel's tail,' and to test pretensions like these. Experiments have been repeatedly made at a great expense to the country." That there is truth in all these observations is evident by the slow progress which naval architecture has made in this country.

The work is divided into four parts. Since the publication of the first edition of the first part, "on the method of constructing the body," shipbuilding has confessedly been in a transition state; many important changes have taken place, such as in the increase of steamships, in the use of iron as a building material, in the alteration in the rules for calculating the tonnage, and in the repeal of the Navigation Laws, which latter measure unfettered the talents and energies of our constructors, and have caused many practices to become obsolete. These and the corresponding alterations and additions which have become necessary, have rendered the present edition of the work desirable to describe and illustrate the existing state of the art as practised in her Majesty's dockyards. The scientific man will find in this work much to interest him in the investigations on the dynamical and statical stability of floating bodies; and the tables in pp. 121 and 134 should open the eyes, if the understandings cannot be reached, of those who imagine they have an intuitive talent for shipbuilding. Part 2 contains an introductory outline to the practice of the art, and Part 3, on the materials most abundantly used in shipbuilding; timber, iron, and copper, will be found interesting to the general reader, as well as to the artizan and mechanic; it contains much valuable informations while to the seaman, or naval officer, the vocabulary of terms in Part 4, cannot fail in being found useful at some period or other during his wanderings. This portion of the work has been so rewritten that we scarcely recognized an old friend in its dew dress.

The work is well illustrated as it should be, and will find its way into libraries as an invaluable reference on the important subject of naval architecture.

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REMARKS ON THE COMBINATION OF TIMBER AND IRON FRAMINGS IN THE BUILDING OF SHIPS.—Bradbury and Evans.

We take the following from this pamphlet, the subject of which is likely to increase in importance amongst our shipbuilders as giving a complete view of this new system of construction.

Attention was early drawn to the fact, that iron steam vessels, when employed in warm climates, very soon became foul on the surface; an incrustation of weeds and shells is speedily formed, and very seriously retards the speed of the vessel; moreover, the material itself is liable to very rapid deterioration, of which there are many well authenticated cases; in iron vessels that have been employed for only a few years within the tropics, on examination, the iron outside plating or skin exposed to the action of the water, as well as the iron frames, has been found very extensively changed in character, being converted into a sort of plumbago, easily cut with a knife, without any strength or tenacity, and creating alarm of sudden destruction and disaster: many endeavours have been made to remedy these evils, but it is feared with only partial success.

Besides these very important objections to the use of iron as a material for ship building, there is another so paramount and so unanswerable that the Lords of the Admiralty had at one time determined to put a stop, as far as they could, to the building of vessels with that material altogether; iron vessels having been proved by different experiments carried on at Portsmouth, by order of the board, unfit for war purposes, all packets intended to carry the mail, or take contracts for that service under government, were ordered to be timber-built vessels, that they might be added to the naval forces of the nation, should they, at any time be required.

To obviate the foregoing serious objections, no plan has hitherto been thought of; and the employment of heavy timber-built vessels is still continued in England, France, and the United States. But in almost every case, where great speed is an indispensable consideration, iron is still resorted to, notwithstanding the very serious evils attending the use of that material, as it is generally employed.

Being fully impressed by the above important facts, Messrs. L. Arman and Co., experienced shipbuilders of Bordeaux, have brought forward a plan for the construction of long sharp steam vessels, in which they extensively employ iron, but which, they confidently believe, is entirely free from the evils above pointed out; and which, nevertheless, combines all the important advantages of freedom from fouling, the durability of the ordinary timber-built vessels (copper-fastened and coppered), with the strength, rigidity, and comparative lightness of iron-built vessels. The plan, in fact, unites the two modes of building; that is to say, the outside part of the vessel in contact with the water, and exposed to the weather, is a timber-built vessel, while internally it is an iron vessel. For instance, in a vessel built on this plan, a framing of timber of the usual form, but of considerably reduced scantling, is prepared; on the outside of this timber frame the wood planking is secured in the common manner, copper-fastened and coppered, as may be judged advisable; inside the timber framing is introduced a second framing of iron, the ribs of which are formed of iron, rolled in a shape somewhat like the letter Z. The iron ribs are not placed vertically, but diagonally, about two or three feet apart, crossing the first framing at an angle of about 45 deg., and bolted to the timber frame at every crossing something similar to the plate-iron riders frequently adopted in timber built ships. The lower ends of these iron ribs are continued forward or aft, so as to connect them with, and form a part of, an iron kelson introduced for that purpose. Iron shelf-pieces, clamps, beams, &c., are also used

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as in iron-built ships; so that, in fact, the inside is to all intents an iron vessel.

Longitudinal plate-iron strakes are riveted or bolted to the inner surface of these iron ribs, at different heights, dividing equally, or nearly so, the distance between the under part of the beams of the main deck and the floor timbers, leaving thereby spaces or instertices which fully expose to view both the iron and wood framings, as also the inside of the wood planking, so that a leak may be easily found out and remedied without injuring or destroying any part of the hull.

To prevent any portion of the cargo finding its way into these interstices, they may be covered over with moveable or sliding pannels, composed either of wood or iron.

In the year 1851, Messrs. L. Arman and Co. built on this plan a steamer of 120 horse power, the General Castilla, which so completely fulfilled the high expectations entertained of Mr. L. Arman's new mode of building, that the French government appointed a commission to examine this new construction, and report thereon; and Mr. Sabattier, a naval engineer, expresses himself in these words, addressed to M. de Chasseloup-Laubat, Minister of the Naval Department:

"The hull of this vessel (General Castilla) is lighter than that of any of the mail packets of 120 horse power, having the same dimensions; and Mr. Arman has certainly succeeded by his combination of wood and iron framings in making it much more rigid and solid. The draught, here annexed, will explain clearly the system adopted by this gentleman; and a few explanations of the mode of construction of the said vessel will show all the advantages of his plan. The timbers of packets for one hundred and twenty horse power are, for for the floors, moulded 6½ inches, and 8½ sided; and 4 by 6 inches at the gunwale. Mr. Arman has reduced the scantling of these frames to 4¾ inches, from the floor timber to the gunwale. The distance between the timbers is 6½ inches, and he introduces alternately a pair of ribs, and then two single ribs. When his timber frame is formed, he brings in his filling-in pieces for the bottom, bolts the frame with the keel; and substitutes for the wooden kelson an iron kelson of 13in. high, and nearly half an inch thick. This kelson is fastened to the timbers by rag-bolts, and to the filling-in pieces by fore-lock bolts. Then beginning about midships, and proceeding fore and aft, he crosses this timber framing by a second framing of 2½ double angle iron, riveted back to back, in the shape of the letter Z, extending from the upper part of the deck to the iron kelson to which it is fastened and forming the sides of the iron kelson aforesaid. These iron ribs are fastened by one or two galvanised iron bolts on each timber, which they cross at an angle of about 45 degrees, and clenched on the outside. These iron ribs are 4 feet 7 inches apart, and between and parallel to them, a light wooden piece 2½ by 5½ is made fast on each of the timbers. Iron shelf-pieces and clamps are substituted for those of wood and fastened to the framing as done in iron vessels. The beams are of iron in the engine-room, and of wood towards each end. The engine-room is separated from the other parts of the vessel by iron bulkheads, fastened to the timber frame by angle iron. The stiffness of the vessel is also increased in this part by four iron riders extending from the main beams to the iron bearers; establishing thereby a connexion between the different parts, and giving to the whole a great solidity. The engine and boiler bearers are of plate and angle iron; fastened on the timber framing with bolts clinched outside, previously to the fastening on of the outside planking. When these framings are properly fastened, as well as the engine-bearers, and the iron riders above-mentioned, they proceed with the outside planking, wales, &c., which are copper-bolted on the timber framing only, the bolts being clinched inside as usual. When the outside planking is securely fastened, and the whole has been well painted,

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three longitudinal strakes of plate iron are riveted on the inside surface of the iron ribs, dividing equally, or nearly so, the distance between the shelf-pieces and the lower floor-heads. Interstices are left between these plate-iron strakes, which fully expose to view the double framing, which may be kept in order and painted, so as to last longer than usual. This important point constitutes one of the greatest advantages of Mr. Arman's plan. The engines are perfectly steady on the iron bearers, and during our trials at sea not the smallest vibration or play could be discovered in any part of this double-framed vessel. We may therefore say that this plan of building combines all the rigidity and solidity of iron-built vessels, with all the advantages of timber-built ships. Repairs of all sorts will present less difficulties than usual; and should it be necessary at any time to remove any of the iron ribs, coach screws may then be advantageously used in refixing them. In conclusion we may say, that sea-going vessels built according to Mr. Arman's plan are lighter and stronger, though not dearer, than those built according to the old system."

The following favourable report has also been made on Mr. Arman's plan :—

Sir,—I have forwarded to the committee of Naval Construction the report of the commission sent by me to Bordeaux in order to examine carefully the plan adopted by you in the building of the General Castilla, just launched. The committee as well as the commission of Bordeaux, entertain a favourable opinion of the advantages to be derived from the combination of wood and iron, as employed in the construction of this vessel, which combines all the qualities of iron-built vessels, without the great disadvantages hitherto attributed to them; and they conclude their report by expressing a wish that one of the steamers ordered to be built by the government should be constructed according to the plan invented and adopted by you in building the General Castilla.

The steamer General Castilla, destined for the Southern Seas, went first to Valparaiso; but previously to her departure, when full laden, she ran aground in the river at Bordeaux, and gave a convincing proof of her strength and solidity, corroborating the opinions expressed with respect to the firmness of her double framing. This vessel was strongly moored at the Bastide, near Bordeaux, opposite the bridge. On a very high tide she broke away from her moorings, and was driven by the violence of the wind across-way on the top of the stone quay, where she remained, supported only by her stem. The water receding, her stern remained afloat, and she hung there the whole of the tide, with the after part of the vessel exposed to the current in the deepest part of the river.

In this awkward position, to prevent her filling when the tide returned, they were obliged to increase her displacement by attaching to her stern the strongest lighters in the river; and the vessel bore this new trial of being entirely suspended by her two ends, without undergoing the least change of form, although she is 160 feet long and 22 feet 3 inches broad; having in the middle of this inflexible framing a steam engine of 120-horse power, and 200 tons of coals.

On her arrival at Valparaiso, her name was changed to that of Cazador. Under the Chilian flag, she has since proved herself one of the best and most effective steamers on that coast.

Having twice been aground in her numerous voyages on that coast—first on the bar of the Maule, then on the rocks at the entrance of the harbour of Valparaiso—her shape remained unchanged, and she bore these disasters without showing any leakage, and without having broken a single bolt of her machinery, which remained perfectly firm on its iron bearers.

Immediately after the building of the Cazador, Messrs L. Arman and Co. constructed the Messager on the same plan, and for the same house, Messrs. Montané and Co., and this vessel is now on her voyage to the Southern Seas.

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While the French government are preparing to build on this plan at Rochefort the corvette La Mégère, with an auxiliary power of two hundred and twenty horse power, Messrs. L. Arman and Co. have had the opportunity of making trials of this new system of building on a much larger scale.

They are now completing a vessel of 2,400 tons for Messrs. Montané and Co., and a clipper of 700 tons for Messrs. Burgain and Co., of Havre.

New Charts.

Published by the Hydrographic Office, Admiralty, and Sold by J. D. Potter, 31, Poultry.

Diagrams and Tables for deducing the Meridian Altitude from two Altitudes observed near the Meridian, by Professor Geogéo Foscolo, of Venice, 1852.			
		1	0
Ex-Meridian Altitude Tables, Mr. J. T. Towson, 1852. 3rd Edition 1852		0	6
England, Thames, Sheet 4, Gravesend Reach, Capt. F. Bullock, R.N. 1852		2	0
Do. S. Coast, Newhaven Harbour, Capt. Bullock, R.N., 1852		1	0
Do. W. Coast, Milford Haven, corrected by Lieut. Aldridge, R.N., 1852		2	0
Ireland, W. Coast, Roundstone, Birterbuy, Greatman and Cashla Bays, Comd. G. A. Bedford, R.N., 1847		2	6
Do. Vidal Bank, Capt. Vidal, R.N., corrected to 1852		2	0
Scotland, W. Coast, Sheet 3, Clyde, Loche Tyne, &c., Capt. Robinson, R.N., 1850		2	0
Baltic, Sheet 1, Femern to Bornholm Danish Survey, 1846		1	6
Do. Ports in the Baltic, Danish Survey, 1846		2	0
Mediterranean, Port Mahon, corrected by Mr. Mainprise, R.N., 1852		2	0
North America, Nova Scotia, Sheets 7 and 8, corrected by Comd. Shortland, R.N., 1851	2s 6d	3	0
South America, W. Coast, Sheets No. 25 to 28, Capt. Sir E. Belcher, C.R.N., 1838	each	1	6
Do. Port Nuevo, Sir E. Belcher, 1849		1	6
Do. Vancouver Island, Beaver Harbour, Lieut. G. H. Mansell, R.N., 1851		0	6
East Indies, Gaspar Strait, 1852		1	6
Do. Banca and Gaspar Straits, 1852		2	0
Do. Sheet 3 S. Australia, corrected to 1851		3	0
Do. Spencer Gulf, Troubridge Shoals, Capt. Lipson, R.N., 1851		0	6

Edward Dunsterville, *Master, R.N.*

Hydrographic Office, Admiralty, 23rd Nov. 1852.

Wreck of the Kincardineshire, of Aberdeen.

We regret to say that on Wednesday last intelligence was received in Banff of the total loss of the brig *Kincardineshire*, of Aberdeen. The vessel was bound from Archangel, laden with a mixed cargo of seeds, oats, and wheat, and the wreck took place on the 26th of September, on a reef of rocks on the coast of Norway. The following is the narrative of the master, Captain John M'Kenzie, who writes from the Shetland Islands to the managing owner of the vessel, Mr. T. Adam, Banker, Banff, by whose kind permission we are enabled to publish the letter :—

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"For a week after I left Archangel we had fine weather and variable winds, until I got as far as Reagel Island. It then came to blow a dreadful gale of wind from N.W., attended with a very high sea. We could show no sail but a close-reefed main-topsail; our ship labouring very hard, and began to make a good deal of water, but nothing to prevent us keeping her free with the pumps. By the working of the beams in the after part of the ship the cabin bulkheads gave way, and she shifted her cargo a good deal. Under these circumstances I put into Sweetnoes Bay, and got the bulkheads and cargo secured the best way I could. In the course of 48 hours I left Sweetnoes with the wind at S.W.; but in the course of the day it came round to the E.N.E., and blew a dreadful gale, with a very heavy sea. I ran under the close-reefed foretopsail as far as the North Keain, from which I took my departure, the wind continuing with little variation until I reached the lat. 63° 28′ N., and long. 3° 7′ E. It then came round to the W.S.W., and blew a complete gale, so hard that we could not show a stitch of canvass but a reefed foresail. The force of the gale was dreadful as far as lat. 65° 38′ N., and long. 4° 34′ E. The gale then veered, and shifted to the W.N.W. Next day at noon I was in lat. 65° 7′ N., and long. 5° 38′ E. It then came on to blow a heavy gale from the W.N.W., so hard that we could not show more canvass than a close-reefed topsail, foresail, and foretopmast staysail. This day at noon I was in lat. 64° 58′ N., and long. 6° 20′ E., by dead reckoning, for I had not seen the sun or stars for some days.

"I was quite aware that my ship was fast drifting on the coast of Norway, and used every means that was in my power to keep her off the land; but all to no purpose, for towards night it came on to blow harder, and the wind veered to the north-west, which was right on to the shore. I was well aware of my dreadful situation, and used every exertion that was in the power of man to keep my ship off the rocks, but all to no purpose; for at 11 P.M. on the 26th of September the ship struck the ground on a reef of sunken rock about 16 English miles off the mainland of Norway. There had been flying showers of snow for 24 hours, which still continued, so that we could see nothing.

"In this dreadful situation, the first thing that we attempted to do was to get the long-boat out, to save our lives; but unfortunately she sank alongside. The jolly-boat was fastened on deck, so we attempted to get her out, which we fortunately accomplished, for in our case there was no time to be lost. The hands then got into her, the best way they could—some without stockings or shoes, or hat or cap, some with no covering but drawers or trousers. The manner in which we saved our lives was a complete miracle. Such a thing is hardly to be found in the annals of the most disastrous shipwrecks.

"We had only a small boat to convey eight men, in a dreadful gale of wind, in a dark night, through sunken rocks and dreadful breakers, with nothing to direct us but God Almighty; for we had neither chart nor compass nor a bit of bread, nor water, nor anything that was fit for the use of man. At 10 A.M. we landed on a small island in a very exhausted state, especially the cook, who was an old man. He was quite delirious, and if he had been in the boat one half hour longer he would have died. We wrung our wet clothes, and exercised our limbs, for we were almost frozen. At 11 A.M. we landed on a large island, where we found a few natives, who used us very kindly, as far as their circumstances would allow.

"On the 28th of September I employed a boat and seven men, with what part of my crew were able, and went off to an island that was near the place where the ship had struck, to see if I could find anything belonging to her; but found nothing either of ship or cargo, and not a vestige of her to be seen. I overhauled some of the adjacent islands, and found some broken casks and

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the head boards, but nothing of any value, nor so much as one stitch of clothes of any kind. Perhaps the vessel may be sunk in a hundred fathoms water. I have done all that I could do—I could do no more."

The Kincardineshire was a vessel of 193 tons burden.—*Darlington and Stockton Times, 30th October.*

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. Rogerson, of the Royal Observatory. From the 21st of October to the 20th of November, 1852.

Month Day.	Week Day.	Barometer. In Inches and Decimals.		Thermometer in the shade.				Wind. Quarter.		Strength.		Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M	P.M	A.M.	P.M.
		In. Dec.	In Dec	o	o	o	o						
21	Th.	30·04	29·96	46	56	36	56	S	SW	1	1	ogd (2	bc
22	F.	29·77	29 65	54	59	49	61	SE	S	1	1	or 1)	op (4
23	S.	29·73	29·69	56	56	54	56	SW	SW	2	3	bc	op (4)
24	Su.	29 62	29·66	50	53	44	55	SW	SW	3	3	bcp 2)	bcp (3
25	M.	29 80	29·82	46	45	43	47	NE	NW	2	3	or 1) (2)	op 3)
26	Tu.	29·35	29·00	44	48	35	50	SE	SE	2	7	qor 1)	qr (3)
27	W.	28·90	28·99	41	43	36	46	NE	NW	2	3	or 1	od (3
28	Th.	29·31	29·41	46	48	42	49	NW	NW	3	5	op (2	op 3)
29	F.	29·74	29·70	37	44	35	45	SW	SW	2	1	bc	or 3) (4
30	S.	29·64	29·67	51	57	41	58	SW	SW	2	2	bc	bc
31	Su.	29·64	29 72	53	57	49	59	SW	SW	2	3	bcr 1)	bc
1	M.	29·81	29·74	56	60	50	62	S	S	1	3	o	od 3)
2	Tu.	29·64	29·54	59	59	57	61	SW	SW	1	3	or (2)	or (3)
3	W.	29·71	29·69	52	54	48	56	SW	SW	2	2	bc	bcp (3)
4	Th.	29·90	29·84	48	56	41	57	SW	SE	1	1	b	bc
5	F.	29·42	29·38	55	61	45	62	SE	SE	4	2	bc	bc
6	S.	29·78	29·84	45	52	42	53	SW	SW	3	5	bcp (2	qbcp (4
7	Su.	29·74	29·96	56	55	50	56	SW	SW	6	6	qo	qor (3)
8	M.	30·11	30·10	60	61	54	62	SW	SW	5	6	qbc	qo
9	Tu.	30·22	30·18	57	58	55	59	SW	W	1	1	o	o
10	W.	30·06	30·04	49	50	48	52	NE	NE	2	2	o	o
11	Th.	29·73	29·46	46	50	41	53	SE	S	2	4	or (1 2)	or (3 4)
12	F.	29·54	29·58	48	46	46	48	NE	E	5	7	qor (1) (2)	qor (3
13	S.	29·50	29·47	43	46	42	47	SE	E	2	1	o	or (4
14	Su.	29·41	29·35	46	52	43	53	E	S	2	1	or 1) (2)	bcr (4
15	M.	29·02	29·10	53	55	48	56	S	SW	2	2	or 1) (2	ber (4
16	Tu.	28·92	28·87	53	56	49	58	S	S	2	3	bc	bcp (3)
17	W.	29·15	29·19	52	53	48	55	SW	SW	4	6	bc	qbcp (3) (4)
18	Th.	29·40	29·56	45	45	42	46	W	W	3	2	be	bc
19	F.	29·76	29·65	38	49	36	50	SE	SE	1	2	bc	or 3) (4
20	S.	29·48	29 84	48	51	44	52	SE	S	1	1	or 2)	or (3

October, 1852.—Mean height of the barometer = 29·821 inches; mean temperature = 46·9 degrees; depth of rain fallen, = 40·8 inches.

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